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# EpiList 1.0: a global checklist of vascular epiphytes

Zotz, Gerhard ; Weigelt, Patrick ; Kessler, Michael ; Kreft, Holger ; Taylor, Amanda

Abstract: Epiphytes make up roughly 10% of all vascular plant species globally and play important functional roles, especially in tropical forests. However, to date, there is no comprehensive list of vascular epiphyte species. Here, we present EpiList 1.0, the first global list of vascular epiphytes based on standardized definitions and taxonomy. We include obligate epiphytes, facultative epiphytes, and hemiepiphytes, as the latter share the vulnerable epiphytic stage as juveniles. Based on 978 references, the checklist includes >31,000 species of 79 plant families. Species names were standardized against World Flora Online for seed plants and against the World Ferns database for lycophytes and ferns. In cases of species missing from these databases, we used other databases (mostly World Checklist of Selected Plant Families). For all species, author names and IDs for World Flora Online entries are provided to facilitate the alignment with other plant databases, and to avoid ambiguities. EpiList 1.0 will be a rich source for synthetic studies in ecology, biogeography, and evolutionary biology as it offers, for the first time, a species-level overview over all currently known vascular epiphytes. At the same time, the list represents work in progress: species descriptions of epiphytic taxa are ongoing and published life form information in floristic inventories and trait and distribution databases is often incomplete and sometimes even wrong. Since the epiphytic growth blends into soil-rooted growth and vice versa, the inclusion or exclusion of particular species in the current list will sometimes be contentious. Thus, initiating a well-founded discussion was one of the motivations for compiling this database; our list represents 31,311 hypotheses on the life form of plant species, and we welcome feedback on possible omission or erroneous inclusions. We release these data into the public domain under a Creative Commons Zero license waiver. When you use the data in your publication, we request that you cite this data paper. If EpiList 1.0 is a major part of the data analyzed in your study, you may consider inviting the EpiList 1.0 core team as collaborators.

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# EpiList 1.0: a global checklist of vascular epiphytes


## Authors:

Gerhard Zotz[1,2], Patrick Weigelt[3], Michael Kessler[4], Holger Kreft[3,5], & Amanda Taylor [3]

[1]Functional Ecology of Plants, Institute of Biology and Environmental Sciences, Carl von Ossietzky University, Ammerländer Heerstr. 114-118, 26129 Oldenburg, Germany;

[2]Smithsonian Tropical Research Institute, Apdo 2072 Balboa, Panama

[3]Biodiversity, Macroecology & Biogeography, University of Göttingen, Büsgenweg 1, 37077 Göttingen, Germany;

[4] Institute of Systematic and Evolutionary Botany, University of Zürich, Zollikerstrasse 107, 8008 Zürich, Switzerland

[5] Centre of Biodiversity and Sustainable Land Use (CBL), University of Göttingen, Büsgenweg 1, 37077 Göttingen, Germany

Corresponding author:

Gerhard Zotz, University Oldenburg, Institute for Biology and Environmental Sciences, Functional Ecology Group, Box 2503, D-26111 Oldenburg, Germany

Tel.: +49-(0)441-798-3794
Fax: +49-(0)441-798-3331

e-mail: gerhard.zotz@uol.de

**ORCID IDs**

Gerhard Zotz: https://orcid.org/0000-0002-6823-2268

Patrick Weigelt: https://orcid.org/0000-0002-2485-3708

Michael Kessler: https://orcid.org/0000-0003-4612-9937

Holger Kreft: https://orcid.org/0000-0003-4471-8236

Amanda Taylor: https://orcid.org/0000-0002-0420-2203

## Introduction

Epiphytes are defined as "plants that germinate and root non-parasitically on other plants at all stages of life" (Zotz 2016). Vascular epiphytes are most conspicuous in the tropics, particularly in montane tropical areas, where their species numbers may locally exceed those of all other life forms, like trees, shrubs or understory herbs, combined (Kelly et al. 1994), although epiphyte-rich vegetation is also found in some temperate regions (Hofstede et al. 2001, Díaz et al. 2010). When reaching such high diversity and abundance, vascular epiphytes play an important role in ecosystem processes like in forest hydrology (Van Stan et al. 2015, Hargis et al. 2019), nutrient fluxes (Nadkarni and Matelson 1991, Nadkarni and Matelson 1992, Richardson et al. 2000), and by provisioning food and shelter for canopy fauna (Melnychuk and Srivastava 2002, Stuntz et al. 2002, McCracken and Forstner 2014). This ecological importance has motivated a large number of studies and a rich body of literature on vascular epiphytes has accumulated: a recent monograph (Zotz 2016) summarizes the knowledge of all aspects of the biology of this plant group.

With the onset of the scientific study of vascular epiphytes (Schimper 1888), researchers have started to enumerate epiphytic taxa. For a given location, this is necessary for, e.g., quantitative comparisons of the local or regional diversity of life forms (Whitmore et al. 1985, Balslev et al. 1998, Linares-Palomino et al. 2009), while more comprehensive lists for entire plant families or for different geographical entities up to the global scale are an indispensable resource for researchers who want to study evolutionary and / or (macro)ecological questions, regardless of whether the focus is clearly on vascular epiphytes (Cascante-Marín and Nivia-Ruiz 2013, Ramos et al. 2019) or whether a comparative approach with different life forms is used (Crayn et al. 2004, Givnish et al. 2014, Givnish et al. 2015). We note that such usage of epiphyte lists can only yield reproducible results if definitions are compatible. Unfortunately, this is frequently not the case. Some studies lump epiphytes with (hemiparasitic) mistletoes (e.g. Cascante-Marín and Estrada-Chavarría 2012, Fall and Drezner 2020), soil-rooted climbers (Nieder et al. 2000, Irume et al. 2013, Engemann et al. 2016), or accidental epiphytes (e.g. Sugden and Robins 1979, Prescott et al. 2015), i.e. rare arboreal individuals of an otherwise terrestrial plant species. Such ambiguities are highly problematic because, e.g., differences in the vertical distribution patterns of "epiphyte" communities may simply be an artefact of the inclusion of climbers (compare, e.g., Nieder et al. 2000 vs. Zotz and Schultz 2008).

Thus, it is fundamental to address the problem of the delimitation of structurally dependent life forms. In the following, we provide detailed definitions of these different life forms, but

note from the start that an entirely unambiguous list of epiphytes is impossible for practical purposes: similar to many other categories in biology, e.g. “rheophytes” (Costa et al. 2020), “CAM-plants” (Zotz 2002), “halophytes” (Grigore et al. 2014), or “succulents” (Ogburn and Edwards 2010) there are numerous cases among epiphytes that defy a clear categorisation, e.g. species with individuals growing as both epiphytes and terrestrials in about equal numbers (“facultative epiphytes”).

There have been a number of previous attempts to compile global lists of epiphytes, most noteworthy Madison (1977), Gentry and Dodson (1987), Kress (1986), and Zotz (2013). All previous compilations gave only total numbers per family and genus, but lacked documentation for the individual species. Here, we go beyond these earlier efforts and present a list of more than 31,000 species with at least one reference from the literature or online databases in >99.9% of all cases to justify their inclusion. Unfortunately, these sources did not necessarily use the same implicit or explicit definition. This ambiguity will inevitably lead to some erroneous inclusions or omissions of species. Even though information from more than 7000 original papers, books, floras, gray literature, online platforms, webpages, and expert comments was used and critically reviewed (for details see: **Sampling Design and Research Methods)**, a compilation like the current one depends on the quality and unambiguity of the original sources.

METADATA

**Class I. Data set descriptors**

**I.A. Data set identity**: The database presented here lists 31,311 vascular plant species. Each data entry includes family, genus and species names, taxonomic authority, and with very few exceptions at least one published source for each species. Species names were standardized as follows: The primary reference for seed plants was the taxonomic backbone of World Flora Online (wfo) version 1.2 from 10 October, 2019. The taxonomic backbone of wfo was initially based on the now discontinued Plant List (theplantlist.org), and is actively being curated by taxonomic specialists of particular plant groups. Since the original working list of epiphytes did not include authorities and most of the names had been manually standardized based on the Plant List when incorporated into the epiphyte list, the taxonomic names had to be matched to wfo names and their respective authorities. Genus names that could not be matched were checked and corrected manually. Species epithets were compared to all species epithets within a genus and best matching epithets were chosen based on orthographic distances. If several names matched equally well (either because of similar spelling or the

occurrence of several names with different authorities and/or infraspecific information) we combined all synonyms that would lead to the same accepted name and prioritized taxonomic names without infraspecific information over names at the species level, checked names over unchecked names and accepted names over synonyms. The results of this automated name assignment were checked for consistency by GZ. Names that matched poorly or still matched several names (e.g. synonyms of two different, accepted species names) were checked manually based on other global resources like Plants of the World Online (powo) or the World Checklist of Selected Plant Families (wcsp) or the original resource reporting the epiphyte species. Cases that could not be matched to any name in wfo typically were recent additions to the EpiList coming from wcsp. Those cases apparently have not yet been added to wfo and were adopted from wcsp. After name matching, synonyms were replaced by their corresponding accepted names, and infraspecific taxa were replaced by their parent species name and authority in wfo. Although we had initially planned to use wfo for ferns and lycophytes as well, many inconsistencies emerged and a very large proportion of species could not be matched. Therefore, we standardized fern and lycophyte names against WorldFerns 8.30 (Hassler and Schmitt 2019), which follows the family and genus taxonomy of the Pteridophyte Phylogeny Group (PPG I, Schuettpelz et al. 2016) with some recent updates.

**I.B. Data set identification code**: N/A

**I.C. Data set description**: N/A

**I.C.1. Originators**: Gerhard Zotz

**I.C.2. Abstract**: Epiphytes make up roughly 10% of all vascular plant species globally and play important functional roles, especially in tropical forests. However, to date there is no comprehensive list of vascular epiphyte species. Here, we present **EpiList 1.0**, the first global list of vascular epiphytes based on standardized definitions and taxonomy. We include obligate epiphytes, facultative epiphytes and hemiepiphytes, as the latter share the vulnerable epiphytic stage as juveniles. Based on 978 references, the checklist includes of > 31,000 species of 79 plant families. Species names were standardized against World Flora Online for seed plants and against the World Ferns database for lycophytes and ferns. In cases of species missing from these databases, we used other databases (mostly World Checklist of Selected Plant Families**)**. For all species, author names and IDs for World Flora Online entries are provided to facilitate the alignment with other plant databases, and to avoid ambiguities. **EpiList 1.0** will be a rich source for synthetic studies in ecology, biogeography, and evolutionary biology as it offers - for the first time - a species-level overview over all

currently known vascular epiphytes. At the same time, the list represents work in progress: species descriptions of epiphytic taxa are ongoing, published life form information in floristic inventories and trait and distribution databases is often incomplete and sometimes even wrong. Since the epiphytic growth blends into soil-rooted growth, the inclusion or exclusion of particular species in the current list will sometimes be contentious. Thus, initiating a discussion was one of the motivations for compiling this database – our list represents 31,311 hypotheses on the life form of plant species and we welcome feedback on possible omission or erroneous inclusions. We release these data into the public domain under a Creative Commons Zero license waiver. When you use the data in your publication, we request that you cite this data paper. If **EpiList 1.0** is a major part of the data analyzed in your study, you may consider inviting the **EpiList 1.0** core team as collaborators. We release these data into the public domain under a Creative Commons Zero license waiver (https://creativecommons.org/share-your-work/public-domain/cc0/). When you use the data in your publication, we request that you cite this data paper. Should **EpiList 1.0** be a major part of the data analyzed in your study, you should consider inviting the **EpiList 1.0** core team (see Originators in the Overall project description) as collaborators. If you plan to use the **EpiList 1.0** dataset, we request that you contact the **EpiList 1.0** core team to learn whether updates of the dataset are available, and whether similar analyses are already ongoing.

**I.D. Key words**: *Araceae, biodiversity, Bromeliaceae, global distribution, hemiepiphyte, life form, nomadic vine, Orchidaceae, structural dependence, tropical, vascular plants*

**Class II. Research origin descriptors**

**II.A. Overall project description**: A list of all plant species that typically grow epiphytically (holoepiphytes and facultative epiphytes) and species that start epiphytically and later establish root contact with the soil (hemiepiphytes).

**II.A.1. Identity**: 31,311 vascular plant species.

**II.A.2. Originators**: see I.C.1.

**II.A.3. Period of study**: Literature and online data sources from 1851 to 2020.

**II.A.4. Objectives**: The purpose of the EpiList database is to provide a standardized, fully referenced species list of vascular epiphytes following up-to-date taxonomy to be used in ecological and evolutionary studies.

**II.A.5. Abstract**: see I.C.2.

**II.A.6. Sources of funding**: none

**II.B**. **"Specific" subproject description**: N/A

**II.B.1. Site description:** planet earth

**II.B.2. Experimental or sampling design**:

**II.B.2.a. Design characteristics**: See below

**II.B.2.b. Permanent plots**: N/A

**II.B.2.c. Data collection period, frequency, etc**.: 1851-2020

**II.B.3. Research methods:** See below

**II.B.3.a. Field/laboratory:**

**Sampling Design and Research Methods**

Information on the epiphytic occurrence of a species was reviewed in more than 7,000 sources. These include papers, books, book chapters, theses, reports, webpages, digital herbaria, and online databases such as wcsp (2019), Flora of China (2008), Brazilian Flora 2020 in construction (continuously updated), and the Global Inventory of Floras and Traits (GIFT) database (Weigelt et al. 2020). In addition, we also contacted experts of many taxa and included their feedback (see acknowledgements and list in Zotz 2013). There was much overlap of species reported in these diverse sources – in most cases, we only provide one key source in **EpiList 1.0**, so that the actual number of sources appearing in the database is only 978.

**Definitions**

*Taxonomic Identification*: Family, genus and species names and authority are given. Because of taxonomic revisions or the use of synonyms, many of the names are different from those used in the original sources.

**EpiList** only includes species, whereas infraspecific taxa, hybrids (e.g. *Laelia* x *tlaxiacoensis* Solano et al. 2019) and variants were excluded. In two exceptional cases, we included unidentified species in **EpiList 1.0**. The first case represents the only report of an epiphytic Poaceae in the genus *Tripogon*. The second case is a *Loxostigma* species (Gesneriaceae), again the only report for this genus. Future studies will have to evaluate whether there really are epiphytic *Tripogon* and *Loxostigma* species or whether accidental epiphytic occurrences of terrestrial species were reported. However, even if it eventually turned out that these were indeed accidentals, reporting accidental epiphytic occurrences is still valuable, because the

study of accidental epiphytes may allow us to understand the first evolutionary steps towards true epiphytism (Hoeber et al. 2020).

*Definition and Assignment of Mechanically Dependent Life Forms*

A summary of five different types of mechanically dependent life forms is given in Fig. 1. Since hemiepiphytes, nomadic vines, and mistletoes are sometimes lumped with true epiphytes (holoepiphytes), it is important to provide unambiguous definitions of these groups (Sperotto et al. 2020).

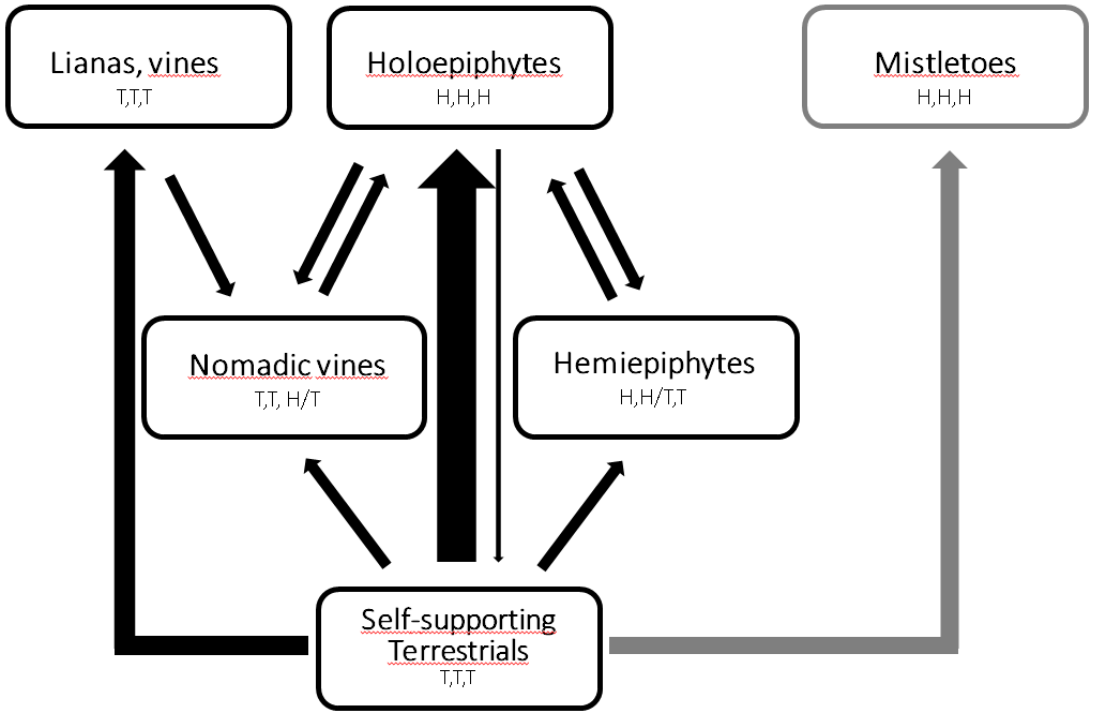


Figure 1: Graphical definition and assumed evolutionary connections (arrows) between different forms of structurally dependent plants. For each life form, (1) the site of germination, (2) the site of attachment of feeding roots during vegetative growth and (3) during reproduction are given (T = terrestrial, H = host tree). Each life form has a unique combination of (1) – (3), with the exception of mistletoes (grey arrows) and epiphytes. The former differ from epiphytes by their parasitic life style.

**We define epiphytes** as "plants that germinate and root non-parasitically on other plants at all stages of life" (Zotz 2016). While this definition can be unambiguously applied in the case of an individual plant, variation may exist within a species. Many species that typically grow on trees may also occur on rocks or soil as long as competition by terrestrial plants is low

("facultative epiphytes"), while a considerable number of terrestrial plant species may sporadically grow on living substrate as "accidental epiphytes" (Hoeber et al. 2019). There are numerous reports in the literature in which such terrestrial species are included in "epiphyte" lists without qualifying comments (e.g. Sugden and Robins 1979, Prescott et al. 2015). While facultative epiphytes are included in **EpiList1.0**, the inclusion of accidentals would lead to an excessive and ecologically rather meaningless species inflation, the magnitude of which becomes apparent with the following number: more than 600 vascular plant species have been recorded as accidental epiphytes in Europe alone (V. Hoeber, M. Klinghardt, G. Zotz, unpubl.). Resolving this issue is relatively easy in reported cases of epiphytic bananas, epiphytic dandelions, or epiphytic red mangroves (G. Zotz, unpubl. obs.), but is much more challenging in less obvious cases: careful investigation of the typical growing site of a species is necessary. However, although there are schemes how to quantify the "arboreality" of a species (Ibisch 1996, Burns 2010), a lack of relevant observations and possible regional differences make an absolutely watertight list of epiphytes impossible.

The inclusion of facultative epiphytes in **EpiList 1.0** has important implications for its use. Most importantly, the inclusion of a species should not be taken as an indication that the species can always be treated as an epiphyte in a binary classification (epiphytic vs. non-epiphytic), because a species may be epiphytic or not in different parts of its range, which must be taken into account in a regional classification by life form. For example, while almost exclusively terrestrial in Europe, *Asplenium scolopendrium* is mainly epiphytic in much more humid forests in Myanmar (Khine et al. 2017).

**Hemiepiphytes** are plants that begin their life with an epiphytic stage, but later establish root contact with the soil (Fig. 1). They can be found in many families with epiphytic members (e.g. Rubiaceae, Urticaceae), but others are in families with few or no true epiphytes (e.g. Araliaceae, Moraceae). When studies lump "epiphytic" and "hemiepiphytic" species, it is hardly possible to make that distinction afterwards. We thus opted for the following approach: since all hemiepiphytes, by definition, share an epiphytic juvenile stage with true epiphytes, which is arguably the most crucial life history stage (Zotz et al. 2001), we included them in **EpiList 1.0**, but marked them as hemiepiphytes. This is also true for facultative hemiepiphytes. Similar to the situation in epiphytes, hemiepiphytism is frequently facultative, e.g. a large proportion of *Schefflera* species occur both as hemiepiphytes or free-standing trees (Plunkett et al. 2020).

**Hemiparasitic mistletoes** and epiphytes share tree crowns as habitat, but central aspects of their biology, especially in regard to plant water relations, are fundamentally different (e.g.

Poltz and Zotz 2011). Mistletoes are found in five families in the order Santalales (Vidal-Russell and Nickrent 2008); epiphytic members are missing. Thus, exclusion from **EpiList 1.0** was straightforward even when included as "epiphyte" in several of the publications on which **EpiList 1.0** is based (e.g. Fall and Drezner 2020). However, there is the interesting case of two species of root parasites that are typically found in tree crowns, where both *Gaiadendron punctatum* (Loranthaceae) (Kuijt 1963) and *Pedicularis dendrothauma* (Orobanchaceae) (Allard et al. 2005) attach themselves to roots or rhizomes of epiphytes. As noted by Kuijt (1963), one could describe both species as true epiphytes in regard to the supporting tree, but as parasites to its co-occurring epiphytes. We opted not to include the two species in **EpiList 1.0** since being non-parasitic is an essential part of our definition of an epiphyte (Fig. 1).

A third group that is sometimes lumped with epiphytes are **nomadic vines** (Fig. 1). This is probably the most contentious group. Previously dubbed "secondary" hemiepiphytes, these plants are thought to germinate on the ground, and after growing up a support "sever all connections" (Kress 1986), thus becoming epiphytic. Recent field observations on aroids (Zotz et al. 2020) are incompatible with this concept. None of the studied root-climbing Araceae became epiphytic, but all individuals maintained continuous contact with the soil via adventitious roots. Consequently, species labelled as "secondary hemiepiphyte" or "nomadic vine" in publications were not included in **EpiList 1.0** either. Unfortunately, since such plants have been frequently treated as "epiphytes" in original publications, it is likely that **EpiList 1.0** still contains some of these climbers. We also note that the issue whether plants with a truly epiphytic stage later in life do exist is unresolved: there are observations that some of the cacti included in **EpiList 1.0** as epiphytes (e.g. *Selenicereus* spp. or *Weberocereus* spp.) may actually belong in that category (Martínez-Quezada et al. 2020), although the necessary studies covering the entire ontogeny are still lacking. If corroborated, such species would also be included but marked – analogous to hemiepiphytes.

Even with the clear definitions given above, problems in the assignment of species to these categories arise 1) because of variation within a species (e.g. facultative epiphytism) and 2) because of conceptual and terminological ambiguities in the sources. The first problem is related to real biological variation, common to many biological categories (e.g. "succulence is not a binary trait", Ogburn and Edwards 2010) and thus - by its very nature - cannot be entirely resolved. This differs from the second problem: treating, e.g., "mistletoes" or climbing "secondary hemiepiphytes" as "epiphytes" ignores fundamental biological differences in the ecology and resource acquisition and should be avoided, whereas

comparisons of different groups of structurally dependent plants or the study of their possible interaction should be highly informative and are therefore encouraged.

There is yet another terminological issue. Most sources treat epiphyte as a life form (for a discussion of "life form", "growth form", "habit" see Zotz 2016). However, the Brazilian Flora (2020) diverges from this practice and distinguishes "life form" and "substrate". For example, a species like *Scaphyglottis livida* will be assigned to life form "herb" and to substrate "epiphyte". A problem arises when researchers only report the life form as defined in the Flora do Brasil (Mota et al. 2018, da Fonseca-da-Silva et al. 2020). In these studies, *Scaphyglottis livida, Aechmea bromeliifolia,* and *Tillandsia streptocarpa* are reported as herbs, while no information is given on "substrate". Both *Aechmea bromeliifolia and Tillandsia streptocarpa* are known as facultative epiphytes (Brazilian Flora 2020 in construction; continuously updated), but this practice makes it impossible to judge unambiguously whether these populations are epiphytic, terrestrial, or both. Similarly, possible terrestrial occurrences of the typically arboreal *Scaphyglottis livida* will be missed as well. We therefore urge researchers following the scheme of the Flora do Brasil to report both life form and substrate.

Due to the lack of data on the relative proportion of terrestrial and epiphytic individuals of a species in all but the exceptional case (e.g. Burns 2008, Burns 2010), we could not distinguish true epiphytes from facultative epiphytes, and both were included in **EpiList 1.0**, while accidental epiphytes were not. In the following, we describe our procedures with a few typical examples.

**Example 1: Scrutinized data base entries**

Life form information in data bases (WCSP 2019) or large treatises (Pridgeon et al. 1999-2014) was accepted unless there was convincing evidence against the categorization as epiphyte. As a concrete example, Munn-Estrada (2017) list two "epiphytic" *Agave* species. Similar records of epiphytic occurrences of a number of other congenerics were found in a monograph (Gentry 2004) or in WCSP (2019) (e.g. *Agave seemannii*). Although there is no doubt that such rather spectacular-looking epiphytic growth of large *Agave* individuals may occur, they clearly represent exceptions within each *Agave* species which do not justify the inclusion of any *Agave* species in **EpiList 1.0**. We note, however, that important insights into the epiphytic life style could be gained from studying such accidental epiphytism.

**Example 2: Contradictions within a publication or between publications**

Munn-Estrada (2017) describes *Marcgravia stonei* as "epiphyte" in the main text, but as "shrub" in the species list. The entire family Marcgraviaceae is variously described as “epiphytic/hemiepiphytic” (Giraldo-Cañas 2018) or as lianas, climbing shrubs and treelets (Lens et al. 2005). It is currently unclear how much of these differences reflect biological plasticity or terminological inconsistency: our selection of included members of this family is mostly based on expert advice (D. Giraldo-Cañas, pers. comm.). Clearly, Marcgraviaceae is one of several families that deserve much more field work to understand their life forms as a basic attribute of their biology (a good example being the study by Massa 1996). We hope that **EpiList 1.0** will provide the traceable starting point to resolve contradictory life form assignments in this and numerous other cases in the future.

**Example 3: Doubtful species, rare and unconfirmed reports**

The genus *Elaeocarpus* (Elaeocarpaceae) represents c. 500 species of woody plants, mostly trees (WCVP 2020). The single existing specimen of *Elaeocarpus crenulatus* is labelled “epiphyte” (Coode 2005). Only known from the type, which was collected 70 years ago, *E. crenulatus* represents the only “epiphytic” species within this terrestrial genus. Its taxonomic status is doubtful (Coode 2005), so we opted for excluding the species from the list. Epiphytic species within otherwise terrestrial taxa are particularly interesting both ecologically and evolutionarily, but also deserve particular scrutiny. Nguyen et al. (2013) described an epiphytic *Alocasia* species (Araceae). However, the photo in their publication clearly shows feeder roots that connect *Alocasia vietnamensis* to the ground. Thus, the species is most likely a nomadic vine and was not included in **EpiList** either.

**Example 4: Epiphytes vs. hemiepiphytes**

Since hemiepiphytes have an epiphytic stage by definition, it is unsurprising that ambiguity exists whether a species is categorized as epiphyte or hemiepiphyte. For example, Penneys and Judd (2011) note that “general collectors often erroneously describe *Blakea* and *Topobea* species as being epiphytic, although, in fact, most are hemiepiphytes”. Incorrect labelling has certainly occurred in other taxa as well. Moreover, similar to epiphytes, there are numerous terrestrial tree species that sometimes grow as facultative hemiepiphytes. With few exceptions (e.g. *Weinmannia tinctoria*, Derroire et al. 2007), facultative hemiepiphytism is even less documented than facultative epiphytism. A major problem is the need for long-term observations to establish the defining ontogenetic trajectory of a hemiepiphyte (Watts et al. 2019). As a case in point, the presence of feeder roots in *Alocasia vietnamensis* (Example 3)

does not rule out that this species is actually a hemiepiphyte, i.e. the species typically establishes epiphytically.

**Species without reference**

In > 99% of all cases, we supported each entry in **EpiList** with at least one reference from the literature, a freely accessible online source, or the personal observation of an expert. The 11 species without references are ferns in genera like *Grammitis* or *Pecluma* that are known to be mainly epiphytic and where morphology further suggests an epiphytic life style.

**Known unknowns**

For some genera (e.g., *Clusia, Schefflera*) in which a large proportion of all species regularly occur as an epiphyte or hemiepiphyte we certainly underestimate the number of species in **EpiList 1.0**. However, without documentation for individual species there was no objective way to include additional species. Another known unknown refers to taxa in underexplored geographical regions. For example, we currently know of 35 epiphytic *Impatiens* species, mostly from Africa. More than half of these species (19) have been described in the last 20 years, and more botanical explorations should lead to the discovery of additional species. Similarly, over 80 new species of epiphytic grammitid ferns (Polypodiaceae), especially in the genus *Oreogrammitis*, are in the process of being described (B. Parris, pers. comm.).

**II.B.3.b. Instrumentation**: N/A

**II.B.3.c. Taxonomy and systematics**:

**Epilist 1.0** encompasses 31,311 epiphytic and hemiepiphytic species (28227 angiosperms, 2 gymnosperms, 2942 Polypodiopsida, 142 Lycopodiopsida). Table 1 summarizes species numbers per genus and per family for seed plants and Table 2 for Polypodiopsida and Lycopodiopsida. Although epiphytes are found in 79 families of vascular plants in 918 genera, their taxonomic distribution is very uneven. Among the 59 families of seed plants, Orchidaceae clearly stands out by accounting for almost 75% of the total epiphyte species count (21,169 of 28,227 species) and 63% of all genera with epiphytes (559 of 892 genera). This dominance would look even more impressive if we excluded all families and genera that have mostly or exclusively hemiepiphytic members. These sum up to 14 families and 42

genera (Table 1). Among Polypodiopsida, epiphytes are particularly common in Polypodiaceae with almost 50% of the total epiphyte species count (1450 of 2942 species) and 55% of all genera (68 of 123 genera). Hemiepiphytism in ferns has only recently been discovered (Nitta and Epps 2009), and subsequently confirmed cases of hemiepiphytic ferns are still confined to a few lineages. Many of the ferns labelled as hemiepiphytic in **EpiList 1.0** are presented as hypotheses to be confirmed or rejected as new data become available.

With 31,311 species, **EpiList 1.0** documents a substantial increase in the number of epiphytes and hemiepiphytes compared to previous estimates of 23,456 species (Kress 1986) and 27,614 species (Zotz 2013). Compared to the last global revision (Zotz 2013), there is also an, albeit somewhat smaller, increase in the number of genera (918 vs. 913, + 1%) and families (79 vs. 73, + 7%).

A synopsis of the taxonomic distribution of vascular epiphytes within families and genera is given separately for seed plants (Table 1), and ferns and lycopods (Table 2). Species listed in wfo are either “accepted”, “synonyms” or in revision, i.e. labelled “ambiguous”. A considerable number of species in **EpiList 1.0** are in the last category. Therefore, Table 1 details separate numbers for “accepted” and all (“accepted” + “ambiguous”) epiphytic species, as well as for the total number of “accepted” and the total number of all (“accepted” + “ambiguous”) species in each family and genus. It also gives the proportion of epiphytes among accepted and all species per genus and family (in %). These proportions are highly correlated (r = 0.96). Some species in **EpiList 1.0** belong to genera that are not found in wfo or treated as synonymous, only accepted in wcsp or powo, e.g. *Trachoma* spp. in Orchidaceae or *Wittmackia* spp. in Bromeliaceae. These obviously unresolved cases could not be matched with any species in wfo, and we did not calculate relative proportions of epiphytic members.

**II.B.3.d. Permit history**: N/A

**II.B.3.e. Legal/organizational requirements**: N/A

**II.B. 4. Project personnel**: See I.C.1.

**Class III. Data set status and accessibility**

**III.A. Status**

**III.A.1. Latest update**: 2020

**III.A.2. Latest archive date**: 2020

**III.A.3. Metadata status**: Last updated June 2020, this document.

**III.A.4. Data verification**:

**III.B. Accessibility**

**III.B.1. Storage location and medium**: The primary data are stored on a server at the University of Göttingen, Germany. The published data are available online through the current publication as a csv.file.

**III.B.2. Contact person(s)**:

Please direct any feedback and questions to:
Gerhard Zotz, Functional Ecology of Plants, Institute of Biology and Environmental Sciences, Ammerländer Heerstr. 114-118, D-26129 Oldenburg, Germany, email: gerhard.zotz@uol.de

**III.B.3. Copyright restrictions**: None

**III.B.4. Proprietary restrictions**: We release these data into the public domain under a Creative Commons Zero license waiver (https://creativecommons.org/share-your-work/public-domain/cc0/). When you use the data in your publication, we request that you cite this data paper. Should **EpiList 1.0** be a major part of the data analyzed in your study, you should consider inviting the **EpiList 1.0** core team (see Originators in the Overall project description) as collaborators. If you plan to use the **EpiList 1.0** dataset, we request that you contact the **EpiList 1.0** core team to learn whether updates of the dataset are available, and whether similar analyses are already ongoing.

**III.B.4.a. Release date**: 13 March 2021

**III.B.4.b. Citation**: Zotz, G., P. Weigelt, M. Kessler, H. Kreft, and A. Taylor. 2021. EpiList 1.0: a global checklist of vascular epiphytes. Ecology e03326. https://doi.org/10.1002/ecy.3326

**III.B.4.c. Disclaimer(s)**: none

**III.B.5. Costs**: none

**Class IV. Data structural descriptors**

**IV.A. Data set file**

**IV.A.1. Identity**: EpiList1.0.csv

**EpiList1.0 (**31,311 entries standardized with wfo and WorldFerns. Up to three references that report epiphytic growth are given. For full list of citations see **Class V.F. Publications and results**)

**IV.A.2. Size**: EpiList1.0.csv (3.5 MB)

**IV.A.3. Format and storage mode**: Data table available as comma-separated values (*.csv).

**IV.A.4. Header information**: See column descriptions in **IV.B.2.**

**IV.A.5. Alphanumeric attributes**: N/A

**IV.A.6. Special characters/fields**: N/A

**IV.A.7. Authentication procedures**: N/A

**IV.B. Variable information:**

**IV.B.1. Variable identity**: N/A

**IV.B.2. Variable definition**:

The following variables are found in EpiList1.0.csv:

Family = plant family

Species = species names following the Standardization reference (= tax source)

Genus = genus name of each species

Epithet = species epithet of each species

Author(s) = Author(s) of species name

Status = Status of species name in standardization reference (= tax source), either "accepted" or "ambiguous" when tax source is wfo or PPG-I, "empty" when name is not found in these sources and standardization was done with other sources

Usage ID = Usage ID of wfo

Tax source = reference used for taxonomic standardization ("Hassler" = WorldFerns Version 8.30, "powo" = plants of the world online; "reference I = Reference I; "wcsp" = world checklist of selected plant families; "wfo" = World Flora Online

Reference I – III = reference stating that the species is an epiphyte / hemiepiphyte

Hemi = "H" indicates that the species is a hemiepiphyte, "H?" if doubtful

**IV.B.3. Units of measurement**: N/A

**IV.B.4. Data type**

**IV.B.4.a. Storage type**: csv.files

**IV.B.4.b. List and definition of variable codes**: See Definitions in "Sampling Design and Research Methods."

**IV.B.4.c. Range for numeric values**: N/A

**IV.B.4.d. Missing value codes**: N/A

**IV.B.4.e. Precision**: N/A

**IV.B.5. Data format**

**IV.B.5.a. Fixed, variable length**: N/A

**IV.B.5.b. Columns**: See **IV.B.2.**

**IV.B.5.c. Optional number of decimal places**: N/A

**IV.C. Data anomalies**: N/A

**Class V. Supplemental descriptors**

**V.A. Data acquisition**

**V.A. 1. Data forms or acquisition methods**: available online through the current publication.

**V.A. 2. Location of completed data forms**: N/A

**V.A. 3. Data entry verification procedures**: N/A

**V.B. Quality assurance/quality control procedures**: N/A

**V.C. Related materials**: N/A

**V.D. Computer programs and data-processing algorithms**: N/A

**V.E. Archiving**

**V.E.1. Archival procedures**: available online through the current publication.

**V.E.2. Redundant archival sites**: N/A

**V.F. Publications and results**: The following list of sources represents the web resources and print publications reporting epiphytic growth of each species in EpiList1.0.csv. We used information from c. 7000 sources, but only a fraction of these is actually shown in the following list. Priority was given to large online data bases or floras, followed by peer-reviewed publications, but annotated species lists and other internet resources were also used. Our goal was to have at least one citation for each species in **EpiList1.0**.


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**V.G. History of data set usage**

**V.G.1. Data request history**: N/A

**V.G.2. Data set update history**: to be updated continuously

**V.G.3. Review history**: N/A

**V.G.4. Questions and comments from secondary users**:

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Tables:

Table 1. Systematic distribution of epiphytic seed plants (Magnoliopsida and Cycadopsida). For each family and genus, the numbers of epiphytic/hemiepiphytic species ("E/H") are given as 1) all species in **Epilist 1.0**, as 2) all epiphytic species that are either "accepted" or "ambiguous" in World Flora Online (wfo), and 3) all epiphytic species that are "accepted" in wfo. For the latter two categories the total number of species ("Total") are given and the percentage of epiphytic species ("%Total"). An "H" marks genera, which have many or only hemiepiphytes. The following example of Acanthaceae clarifies the use of the table. **Epilist 1.0** contains 8 species of this family. Six of them are accepted in wfo, which is equivalent to 0.2 % of the 3944 accepted species. One more epiphytic species is found in wfo as "ambiguous". These 7 accepted / ambiguous epiphytic species (all) represent < 0.1% of the 8920 accepted / ambiguous species listed in wfo. An 8th epiphytic species of **Epilist 1.0** is not found in wfo but accepted in plants of the world online (powo).

| | | | wfo (all) | | | wfo (accepted) | | |
|---|---|---|---|---|---|---|---|---|
| **Class/family** | **Genus** | E/H | E/H | Total | % Total | E/H | Total | % Total |
| **Magnoliopsida** | | 28227 | 27144 | 508447 | 5.3 | 25318 | 303775 | 8.3 |
| **Acanthaceae** | | 8 | 7 | 8920 | <0.1 | 6 | 3944 | 0.2 |
| | *Clistax* | 1 | 0 | 2 | <0.1 | 0 | 2 | <0.1 |
| | *Dischistocalyx* | 2 | 2 | 16 | 12.5 | 2 | 13 | 15.4 |
| | *Justicia* | 1 | 1 | 1393 | <0.1 | 1 | 652 | 0.2 |
| | *Louteridium* | 1 | 1 | 11 | 9.1 | 1 | 9 | 11.1 |
| | *Ruellia* | 1 | 1 | 686 | <0.1 | 1 | 269 | 0.4 |
| | *Stenandrium* | 1 | 1 | 78 | 1.3 | 1 | 49 | 2.0 |
| | *Stenostephanus* | 1 | 1 | 69 | 1.4 | | 40 | <0.1 |
| **Alzateaceae** | | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| | *Alzatea* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| **Amaryllidaceae** | | 10 | 10 | 2603 | 0.4 | 10 | 2246 | 0.4 |
| | *Clivia* | 1 | 1 | 10 | 10.0 | 1 | 7 | 14.3 |
| | *Cyrtanthus* | 1 | 1 | 62 | 1.6 | 1 | 56 | 1.8 |
| | *Hippeastrum* | 4 | 4 | 106 | 3.8 | 4 | 94 | 4.3 |
| | *Pamianthe* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Scadoxus* | 1 | 1 | 13 | 7.7 | 1 | 9 | 11.1 | |
| **Apocynaceae** | | 269 | 253 | 9347 | 2.7 | 91 | 5556 | 1.6 | |
| | *Absolmsia* | 1 | 1 | 2 | 50.0 | 1 | 1 | 100 | |
| | *Anatropanthus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Centrostemma* | 1 | 1 | 1 | 100 | | 0 | | |
| | *Conchophyllum* | 1 | 1 | 10 | 10.0 | | 0 | | |
| | *Dischidia* | 36 | 35 | 128 | 27.3 | 34 | 116 | 29.3 | |
| | *Dischidiopsis* | 8 | 8 | 9 | 88.9 | 8 | 8 | 100 | |
| | *Epistemma* | 3 | 3 | 4 | 75.0 | 2 | 3 | 66.7 | |
| | *Heynella* | 1 | 1 | 1 | 100 | | 0 | | |
| | *Hiepia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Hoya* | 208 | 193 | 466 | 41.4 | 37 | 51 | 72.5 | |
| | *Mandevilla* | 4 | 4 | 199 | 2.0 | 4 | 191 | 2.1 | |
| | *Micholitzia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Oreosparte* | 1 | 1 | 1 | 100 | | 0 | | |
| | *Physostelma* | 1 | 1 | 5 | 20.0 | 1 | 1 | 100 | |
| | *Sarcorrhiza* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| **Aquifoliaceae** | | 3 | 3 | 882 | 0.3 | 3 | 480 | 0.6 | H |
| | *Ilex* | 3 | 3 | 823 | 0.4 | 3 | 475 | 0.6 | H |
| **Araceae** | | 747 | 717 | 4670 | 15.4 | 685 | 3366 | 20.4 | |
| | *Anthurium* | 664 | 634 | 1616 | 39.2 | 603 | 926 | 65.1 | |
| | *Arisaema* | 3 | 3 | 190 | 1.6 | 3 | 180 | 1.7 | |
| | *Philodendron* | 56 | 56 | 661 | 8.5 | 55 | 486 | 11.3 | |
| | *Remusatia* | 4 | 4 | 4 | 100 | 4 | 4 | 100 | |
| | *Scindapsus* | 5 | 5 | 37 | 13.5 | 5 | 35 | 14.3 | |
| | *Stenospermation* | 14 | 14 | 79 | 17.7 | 14 | 54 | 25.9 | |
| | *Syngonium* | 1 | 1 | 40 | 2.5 | 1 | 35 | 2.9 | |
| **Araliaceae** | | 94 | 94 | 1981 | 4.7 | 94 | 1533 | 6.1 | H |
| | *Aralia* | 7 | 7 | 99 | 7.1 | 7 | 74 | 9.5 | H |
| | *Dendropanax* | 1 | 1 | 104 | 1.0 | 1 | 99 | 1.0 | H |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Oreopanax* | 14 | 14 | 164 | 8.5 | 14 | 152 | 9.2 | H |
| | *Pentapanax* | 1 | 1 | 2 | 50.0 | 1 | 1 | 100 | |
| | *Polyscias* | 2 | 2 | 184 | 1.1 | 2 | 176 | 1.1 | H |
| | *Pseudopanax* | 1 | 1 | 7 | 14.3 | 1 | 7 | 14.3 | H |
| | *Raukaua* | 2 | 2 | 8 | 25.0 | 2 | 8 | 25.0 | H |
| | *Schefflera* | 66 | 66 | 598 | 11.0 | 66 | 591 | 11.2 | H |
| **Asparagaceae** | | 25 | 24 | 3465 | 0.7 | 24 | 2916 | 0.9 | |
| | *Cordyline* | 1 | 1 | 36 | 2.8 | 1 | 26 | 3.8 | |
| | *Drimia* | 1 | 1 | 110 | 0.9 | 1 | 99 | 1.0 | |
| | *Heteropolygonatum* | 7 | 6 | 6 | 100 | 6 | 6 | 100 | |
| | *Hosta* | 1 | 1 | 43 | 2.3 | 1 | 23 | 4.3 | |
| | *Maianthemum* | 7 | 7 | 39 | 17.9 | 7 | 39 | 17.9 | |
| | *Polygonatum* | 7 | 7 | 81 | 8.6 | 7 | 71 | 9.9 | |
| | *Yucca* | 1 | 1 | 96 | 1.0 | 1 | 49 | 2.0 | |
| **Asphodelaceae** | | 1 | 1 | 1510 | <0.1 | 1 | 1232 | 0.1 | |
| | *Dianella* | 1 | 1 | 42 | 2.4 | 1 | 41 | 2.4 | |
| **Asteliaceae** | | 10 | 9 | 37 | 24.3 | 9 | 37 | 24.3 | |
| | *Astelia* | 6 | 5 | 26 | 19.2 | 5 | 26 | 19.2 | |
| | *Collospermum* | 4 | 4 | 5 | 80.0 | 4 | 5 | 80.0 | |
| **Asteraceae** | | 38 | 38 | 58232 | <0.1 | 37 | 32704 | 0.1 | |
| | *Aristeguietia* | 1 | 1 | 19 | 5.3 | 1 | 19 | 5.3 | |
| | *Brachyglottis* | 1 | 1 | 43 | 2.3 | 1 | 38 | 2.6 | |
| | *Chromolaena* | 1 | 1 | 180 | 0.6 | 1 | 175 | 0.6 | |
| | *Dahlia* | 1 | 1 | 58 | 1.7 | 1 | 42 | 2.4 | |
| | *Nelsonianthus* | 1 | 1 | 1 | 100 | | 0 | | |
| | *Neomirandea* | 22 | 22 | 30 | 73.3 | 22 | 30 | 73.3 | |
| | *Pachythamnus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Pentacalia* | 3 | 3 | 263 | 1.1 | 3 | 223 | 1.3 | |
| | *Senecio* | 2 | 2 | 3035 | <0.1 | 2 | 1583 | 0.1 | |
| | *Sinclairia* | 2 | 2 | 32 | 6.3 | 2 | 28 | 7.1 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *Solanecio* | 1 | 1 | 17 | 5.9 | 1 | 16 | 6.3 |
| | *Tuberostylis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| **Balsaminaceae** | | 35 | 34 | 1237 | 2.7 | 10 | 488 | 2.0 |
| | *Impatiens* | 35 | 34 | 1222 | 2.8 | 10 | 487 | 2.1 |
| **Begoniaceae** | | 58 | 56 | 1809 | 3.1 | 56 | 1601 | 3.5 |
| | *Begonia* | 58 | 56 | 1795 | 3.1 | 56 | 1600 | 3.5 |
| **Bromeliaceae** | | 1985 | 1970 | 3613 | 54.5 | 1943 | 3319 | 58.5 |
| | *Aechmea* | 277 | 274 | 298 | 91.9 | 274 | 283 | 96.8 |
| | *Androlepis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| | *Araeococcus* | 9 | 9 | 9 | 100 | 9 | 9 | 100 |
| | *Billbergia* | 65 | 64 | 94 | 68.1 | 64 | 66 | 97.0 |
| | *Brocchinia* | 5 | 5 | 23 | 21.7 | 5 | 21 | 23.8 |
| | *Bromelia* | 1 | 1 | 68 | 1.5 | 1 | 61 | 1.6 |
| | *Canistrum* | 22 | 21 | 22 | 95.5 | 21 | 21 | 100 |
| | *Catopsis* | 21 | 21 | 24 | 87.5 | 21 | 21 | 100 |
| | *Cipuropsis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| | *Connellia* | 1 | 1 | 6 | 16.7 | 1 | 6 | 16.7 |
| | *Disteganthus* | 5 | 3 | 3 | 100 | 3 | 3 | 100 |
| | *Fascicularia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| | *Fernseea* | 1 | 1 | 2 | 50.0 | 1 | 2 | 50.0 |
| | *Glomeropitcairnia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| | *Greigia* | 1 | 1 | 36 | 2.8 | 1 | 35 | 2.9 |
| | *Guzmania* | 203 | 202 | 224 | 90.2 | 202 | 218 | 92.7 |
| | *Hohenbergia* | 44 | 44 | 63 | 69.8 | 44 | 62 | 71.0 |
| | *Hohenbergiopsis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| | *Lymania* | 8 | 8 | 9 | 88.9 | 8 | 9 | 88.9 |
| | *Mezobromelia* | 8 | 8 | 9 | 88.9 | 8 | 8 | 100 |
| | *Navia* | 4 | 4 | 92 | 4.3 | 4 | 91 | 4.4 |
| | *Neoregelia* | 117 | 116 | 126 | 92.1 | 116 | 124 | 93.5 |
| | *Nidularium* | 42 | 42 | 60 | 70.0 | 42 | 55 | 76.4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Orthophytum* | 3 | 3 | 68 | 4.4 | 3 | 68 | 4.4 | |
| | *Pitcairnia* | 40 | 40 | 421 | 9.5 | 40 | 402 | 10.0 | |
| | *Portea* | 2 | 2 | 8 | 25.0 | 2 | 8 | 25.0 | |
| | *Quesnelia* | 19 | 19 | 23 | 82.6 | 19 | 22 | 86.4 | |
| | *Racinaea* | 21 | 21 | 21 | 100 | 0 | 0 | | |
| | *Ronnbergia* | 23 | 11 | 11 | 100 | 11 | 11 | 100 | |
| | *Tillandsia* | 665 | 659 | 751 | 87.7 | 659 | 692 | 95.2 | |
| | *Vriesea* | 316 | 315 | 396 | 79.5 | 315 | 361 | 87.3 | |
| | *Wallisia* | 2 | 2 | NA | | 0 | NA | | |
| | *Werauhia* | 10 | 10 | 11 | 90.9 | | 0 | | |
| | *Wittmackia* | 42 | 41 | NA | | 0 | NA | | |
| **Burmanniaceae** | | 2 | 2 | 165 | 1.2 | 2 | 163 | 1.2 | |
| | *Burmannia* | 2 | 2 | 56 | 3.6 | 2 | 56 | 3.6 | |
| **Burseraceae** | | 1 | 1 | 1039 | <0.1 | 1 | 649 | 0.2 | H |
| | *Bursera* | 1 | 1 | 136 | 0.7 | 1 | 120 | 0.8 | H |
| **Cactaceae** | | 130 | 129 | 7672 | 1.7 | 119 | 2230 | 5.4 | |
| | *Disocactus* | 11 | 11 | 25 | 44.0 | 11 | 15 | 73.3 | |
| | *Epiphyllum* | 12 | 12 | 33 | 36.4 | 12 | 15 | 80.0 | |
| | *Hatiora* | 6 | 6 | 12 | 50.0 | 6 | 8 | 75.0 | |
| | *Hylocereus* | 12 | 12 | 20 | 60.0 | 12 | 15 | 80.0 | |
| | *Lepismium* | 4 | 4 | 27 | 14.8 | 4 | 8 | 50.0 | |
| | *Lymanbensonia* | 3 | 3 | 3 | 100 | | 0 | | |
| | *Pfeiffera* | 4 | 4 | 8 | 50.0 | 3 | 3 | 100 | |
| | *Pseudorhipsalis* | 6 | 6 | 7 | 85.7 | 6 | 7 | 85.7 | |
| | *Rhipsalidopsis* | 1 | 1 | 2 | 50.0 | | 0 | | |
| | *Rhipsalis* | 39 | 38 | 120 | 31.7 | 37 | 52 | 71.2 | |
| | *Schlumbergera* | 5 | 5 | 17 | 29.4 | 2 | 7 | 28.6 | |
| | *Selenicereus* | 18 | 18 | 34 | 52.9 | 18 | 28 | 64.3 | |
| | *Trichocereus* | 1 | 1 | 51 | 2.0 | 1 | 9 | 11.1 | |
| | *Weberocereus* | 8 | 8 | 11 | 72.7 | 7 | 9 | 77.8 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Calophyllaceae** | | 9 | 9 | 528 | 1.7 | 9 | 302 | 3.0 | H |
| | *Clusiella* | 9 | 9 | 9 | 100 | 9 | 9 | 100 | H |
| **Campanulaceae** | | 32 | 31 | 2703 | 1.1 | 31 | 2383 | 1.3 | |
| | *Burmeistera* | 18 | 17 | 106 | 16.0 | 17 | 103 | 16.5 | |
| | *Canarina* | 1 | 1 | 4 | 25.0 | 1 | 3 | 33.3 | |
| | *Clermontia* | 12 | 12 | 25 | 48.0 | 12 | 24 | 50.0 | |
| | *Trematolobelia* | 1 | 1 | 10 | 10.0 | 1 | 8 | 12.5 | |
| **Clusiaceae** | | 70 | 69 | 1212 | 5.6 | 68 | 868 | 7.7 | H |
| | *Clusia* | 69 | 68 | 347 | 19.5 | 67 | 307 | 21.9 | H |
| | *Quapoya* | 1 | 1 | 12 | 8.3 | 1 | 5 | 20.0 | H |
| **Commelinaceae** | | 3 | 3 | 810 | 0.4 | 3 | 727 | 0.4 | |
| | *Belosynapsis* | 1 | 1 | 6 | 16.7 | 1 | 6 | 16.7 | |
| | *Cochliostema* | 2 | 2 | 2 | 100 | 2 | 2 | 100 | |
| **Costaceae** | | 6 | 6 | 145 | 4.1 | 6 | 139 | 4.3 | |
| | *Costus* | 6 | 6 | 111 | 5.4 | 6 | 105 | 5.7 | |
| **Crassulaceae** | | 30 | 29 | 3163 | 0.9 | 27 | 1482 | 1.8 | |
| | *Aichryson* | 2 | 2 | 27 | 7.4 | 2 | 18 | 11.1 | |
| | *Bryophyllum* | 1 | 1 | 47 | 2.1 | 1 | 46 | 2.2 | |
| | *Echeveria* | 12 | 11 | 242 | 4.5 | 11 | 170 | 6.5 | |
| | *Kalanchoe* | 6 | 6 | 211 | 2.8 | 5 | 133 | 3.8 | |
| | *Sedum* | 9 | 9 | 807 | 1.1 | 8 | 392 | 2.0 | |
| **Cunoniaceae** | | 2 | 2 | 593 | 0.3 | 2 | 245 | 0.8 | H |
| | *Leiospermum* | 1 | 1 | 3 | 33.3 | 1 | 1 | 100 | H |
| | *Weinmannia* | 1 | 1 | 219 | 0.5 | 1 | 117 | 0.9 | H |
| **Cyclanthaceae** | | 60 | 60 | 261 | 23.0 | 60 | 231 | 26.0 | |
| | *Asplundia* | 7 | 7 | 104 | 6.7 | 7 | 100 | 7.0 | |
| | *Chorigyne* | 7 | 7 | 7 | 100 | 7 | 7 | 100 | |
| | *Ludovia* | 2 | 2 | 3 | 66.7 | 2 | 3 | 66.7 | |
| | *Sphaeradenia* | 40 | 40 | 54 | 74.1 | 40 | 53 | 75.5 | |
| | *Stelestylis* | 3 | 3 | 4 | 75.0 | 3 | 4 | 75.0 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *Thoracocarpus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| **Cyperaceae** | | 1 | 1 | 6433 | <0.1 | 1 | 5783 | <0.1 |
| | *Coleochloa* | 1 | 1 | 8 | 12.5 | 1 | 8 | 12.5 |
| **Ericaceae** | | 741 | 729 | 7241 | 10.1 | 531 | 3553 | 14.9 |
| | *Agapetes* | 78 | 78 | 161 | 47.9 | 78 | 147 | 52.5 |
| | *Anthopteropsis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| | *Anthopterus* | 7 | 7 | 14 | 50.0 | 7 | 12 | 58.3 |
| | *Calopteryx* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| | *Cavendishia* | 82 | 82 | 125 | 65.6 | 81 | 113 | 71.7 |
| | *Ceratostema* | 26 | 26 | 73 | 35.6 | 26 | 36 | 72.2 |
| | *Costera* | 8 | 8 | 10 | 80.0 | 8 | 10 | 80.0 |
| | *Demosthenesia* | 3 | 3 | 14 | 21.4 | 3 | 13 | 23.1 |
| | *Didonica* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| | *Dimorphanthera* | 14 | 14 | 78 | 17.9 | 14 | 77 | 18.2 |
| | *Diogenesia* | 4 | 4 | 14 | 28.6 | 3 | 13 | 23.1 |
| | *Diplycosia* | 46 | 41 | 120 | 34.2 | 40 | 111 | 36.0 |
| | *Disterigma* | 30 | 30 | 47 | 63.8 | 25 | 38 | 65.8 |
| | *Gaultheria* | 4 | 4 | 165 | 2.4 | 4 | 141 | 2.8 |
| | *Gonocalyx* | 5 | 5 | 11 | 45.5 | 5 | 11 | 45.5 |
| | *Lateropora* | 2 | 2 | 3 | 66.7 | 2 | 3 | 66.7 |
| | *Lebetanthus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| | *Macleania* | 18 | 18 | 43 | 41.9 | 18 | 37 | 48.6 |
| | *Mycerinus* | 1 | 1 | 3 | 33.3 | 1 | 3 | 33.3 |
| | *Oreanthes* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| | *Orthaea* | 15 | 15 | 35 | 42.9 | 15 | 34 | 44.1 |
| | *Paphia* | 2 | 2 | 21 | 9.5 | | 0 | |
| | *Plutarchia* | 1 | 1 | 11 | 9.1 | 1 | 10 | 10.0 |
| | *Prionotes* | 1 | 1 | 2 | 50.0 | | 0 | |
| | *Psammisia* | 35 | 33 | 69 | 47.8 | 31 | 45 | 68.9 |
| | *Rhododendron* | 169 | 166 | 1500 | 11.1 | 35 | 641 | 5.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Rusbya* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Satyria* | 12 | 10 | 28 | 35.7 | 10 | 24 | 41.7 | |
| | *Semiramisia* | 1 | 1 | 5 | 20.0 | 1 | 3 | 33.3 | |
| | *Siphonandra* | 1 | 1 | 5 | 20.0 | 1 | 3 | 33.3 | |
| | *Sphyrospermum* | 19 | 19 | 24 | 79.2 | 19 | 24 | 79.2 | |
| | *Themistoclesia* | 16 | 16 | 38 | 42.1 | 14 | 27 | 51.9 | |
| | *Thibaudia* | 20 | 20 | 118 | 16.9 | 19 | 62 | 30.6 | |
| | *Utleya* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Vaccinium* | 104 | 104 | 767 | 13.6 | 53 | 223 | 23.8 | |
| **Gentianaceae** | | 28 | 24 | 3044 | 0.8 | 27 | 1688 | 1.6 | H |
| | *Fagraea* | 25 | 21 | 77 | 27.3 | 25 | 72 | 34.7 | H |
| | *Macrocarpaea* | 3 | 3 | 115 | 2.6 | 2 | 75 | 2.7 | |
| **Gesneriaceae** | | 628 | 626 | 4912 | 12.7 | 616 | 3108 | 19.8 | |
| | *Acanthonema* | 1 | 1 | 2 | 50.0 | 1 | 2 | 50.0 | |
| | *Aeschynanthus* | 199 | 199 | 201 | 99.0 | 194 | 194 | 100 | |
| | *Agalmyla* | 91 | 91 | 96 | 94.8 | 91 | 96 | 94.8 | |
| | *Alloplectus* | 6 | 6 | 29 | 20.7 | 6 | 6 | 100 | |
| | *Asteranthera* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Codonanthe* | 21 | 21 | 23 | 91.3 | 20 | 20 | 100 | |
| | *Codonanthopsis* | 4 | 4 | 4 | 100 | 4 | 4 | 100 | |
| | *Columnea* | 191 | 191 | 254 | 75.2 | 191 | 195 | 97.9 | |
| | *Crantzia* | 1 | 1 | 11 | 9.1 | 1 | 2 | 50.0 | |
| | *Cremosperma* | 2 | 2 | 27 | 7.4 | 2 | 23 | 8.7 | |
| | *Cyrtandra* | 2 | 2 | 1043 | 0.2 | 2 | 732 | 0.3 | |
| | *Drymonia* | 14 | 14 | 82 | 17.1 | 14 | 75 | 18.7 | |
| | *Episcia* | 3 | 3 | 42 | 7.1 | 2 | 12 | 16.7 | |
| | *Fieldia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 | |
| | *Glossoloma* | 5 | 5 | 27 | 18.5 | 5 | 27 | 18.5 | |
| | *Heppiella* | 1 | 1 | 4 | 25.0 | 1 | 4 | 25.0 | |
| | *Kohleria* | 2 | 2 | 50 | 4.0 | 2 | 40 | 5.0 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Loxostigma* | 1 | | 7 | <0.1 | | 7 | <0.1 | |
| | *Lysionotus* | 13 | 13 | 35 | 37.1 | 13 | 23 | 56.5 | |
| | *Nematanthus* | 31 | 30 | 45 | 66.7 | 30 | 35 | 85.7 | |
| | *Neomortonia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 | |
| | *Oerstedina* | 3 | 3 | 3 | 100 | 3 | 3 | 100 | |
| | *Oreocharis* | 1 | 1 | 67 | 1.5 | 1 | 55 | 1.8 | |
| | *Paradrymonia* | 10 | 10 | 46 | 21.7 | 10 | 31 | 32.3 | |
| | *Primulina* | 2 | 2 | 121 | 1.7 | 2 | 121 | 1.7 | |
| | *Rufodorsia* | 4 | 4 | 4 | 100 | 4 | 4 | 100 | |
| | *Sarmienta* | 1 | 1 | 2 | 50.0 | 1 | 1 | 100 | |
| | *Sinningia* | 5 | 5 | 87 | 5.7 | 4 | 70 | 5.7 | |
| | *Streptocarpus* | 5 | 5 | 202 | 2.5 | 4 | 134 | 3.0 | |
| | *Trichantha* | 2 | 2 | 5 | 40.0 | 2 | 3 | 66.7 | |
| | *Trichosporum* | 1 | 1 | 88 | 1.1 | | 0 | | |
| **Griseliniaceae** | | 3 | 3 | 7 | 42.9 | 3 | 7 | 42.9 | H |
| | *Griselinia* | 3 | 3 | 7 | 42.9 | 3 | 7 | 42.9 | H |
| **Grossulariaceae** | | 2 | 2 | 513 | 0.4 | 2 | 195 | 1.0 | |
| | *Ribes* | 2 | 2 | 431 | 0.5 | 2 | 194 | 1.0 | |
| **Hydrangeaceae** | | 2 | 2 | 419 | 0.5 | 2 | 236 | 0.8 | |
| | *Hydrangea* | 2 | 2 | 107 | 1.9 | 2 | 52 | 3.8 | |
| **Lamiaceae** | | 1 | 1 | 9390 | <0.1 | 1 | 7879 | <0.1 | |
| | *Callicarpa* | 1 | 1 | 187 | 0.5 | 1 | 172 | 0.6 | |
| **Lentibulariaceae** | | 28 | 28 | 499 | 5.6 | 27 | 312 | 8.7 | |
| | *Pinguicula* | 6 | 6 | 153 | 3.9 | 5 | 73 | 6.8 | |
| | *Utricularia* | 22 | 22 | 296 | 7.4 | 22 | 218 | 10.1 | |
| **Liliaceae** | | 2 | 2 | 834 | 0.2 | 2 | 745 | 0.3 | |
| | *Lilium* | 2 | 2 | 129 | 1.6 | 2 | 111 | 1.8 | |
| **Malvaceae** | | 2 | 2 | 9185 | <0.1 | 2 | 4462 | <0.1 | H |
| | *Spirotheca* | 2 | 2 | 5 | 40.0 | 2 | 5 | 40.0 | H |
| **Marantaceae** | | 1 | 1 | 643 | 0.2 | 1 | 569 | 0.2 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Monotagma* | 1 | 1 | 45 | 2.2 | 1 | 39 | 2.6 | |
| **Marcgraviaceae** | | 38 | 13 | 184 | 7.1 | 35 | 136 | 25.7 | H |
| | *Marcgravia* | 9 | 7 | 86 | 8.1 | 8 | 61 | 13.1 | H |
| | *Marcgraviastrum* | 6 | 1 | 14 | 7.1 | 5 | 11 | 45.5 | H |
| | *Norantea* | 1 | 1 | 13 | 7.7 | 1 | 7 | 14.3 | H |
| | *Pseudosarcopera* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | H |
| | *Ruyschia* | 3 | 1 | 13 | 7.7 | 3 | 10 | 30.0 | H |
| | *Sarcopera* | 3 | 1 | 7 | 14.3 | 3 | 7 | 42.9 | H |
| | *Schwartzia* | 10 | 2 | 19 | 10.5 | 9 | 18 | 50.0 | H |
| | *Souroubea* | 5 | 1 | 28 | 3.6 | 5 | 21 | 23.8 | H |
| **Melastomataceae** | | 378 | 376 | 9704 | 3.9 | 214 | 4077 | 5.2 | |
| | *Acinodendron* | 1 | 1 | 529 | 0.2 | 1 | 491 | 0.2 | |
| | *Bertolonia* | 1 | 1 | 35 | 2.9 | 1 | 9 | 11.1 | |
| | *Blakea* | 90 | 90 | 127 | 70.9 | 68 | 81 | 84.0 | |
| | *Calvoa* | 7 | 7 | 25 | 28.0 | 5 | 9 | 55.6 | |
| | *Clidemia* | 9 | 9 | 341 | 2.6 | 8 | 173 | 4.6 | |
| | *Dicellandra* | 1 | 1 | 5 | 20.0 | 1 | 3 | 33.3 | |
| | *Diplectria* | 2 | 2 | 26 | 7.7 | 1 | 1 | 100 | |
| | *Graffenrieda* | 2 | 2 | 62 | 3.2 | 1 | 54 | 1.9 | H |
| | *Gravesia* | 2 | 2 | 117 | 1.7 | 2 | 109 | 1.8 | |
| | *Guyonia* | 1 | 1 | 2 | 50.0 | 1 | 1 | 100 | |
| | *Kendrickia* | 1 | 1 | 1 | 100 | | 0 | | |
| | *Macrocentrum* | 4 | 4 | 25 | 16.0 | 4 | 24 | 16.7 | |
| | *Medinilla* | 147 | 146 | 509 | 28.7 | 52 | 85 | 61.2 | |
| | *Memecylon* | 1 | 1 | 474 | 0.2 | | 106 | <0.1 | |
| | *Miconia* | 9 | 9 | 1216 | 0.7 | 9 | 881 | 1.0 | |
| | *Monolena* | 8 | 8 | 16 | 50.0 | 8 | 8 | 100 | |
| | *Pachycentria* | 8 | 8 | 28 | 28.6 | | 0 | | |
| | *Phainantha* | 4 | 4 | 5 | 80.0 | 4 | 5 | 80.0 | |
| | *Pleiochiton* | 12 | 11 | 11 | 100 | 5 | 5 | 100 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Plethiandra* | 7 | 7 | 11 | 63.6 | | 0 | | |
| | *Preussiella* | 1 | 1 | 2 | 50.0 | 1 | 2 | 50.0 | |
| | *Salpinga* | 3 | 3 | 12 | 25.0 | 2 | 9 | 22.2 | |
| | *Topobea* | 55 | 55 | 85 | 64.7 | 38 | 49 | 77.6 | H |
| | *Triolena* | 2 | 2 | 20 | 10.0 | 2 | 20 | 10.0 | |
| **Moraceae** | | 389 | 389 | 2002 | 19.4 | 383 | 1217 | 31.5 | H |
| | *Dorstenia* | 2 | 2 | 136 | 1.5 | 2 | 117 | 1.7 | |
| | *Ficus* | 384 | 384 | 983 | 39.1 | 380 | 841 | 45.2 | H |
| | *Pourouma* | 1 | 1 | 38 | 2.6 | 1 | 29 | 3.4 | H |
| **Myrtaceae** | | 3 | 3 | 6532 | <0.1 | 3 | 5970 | 0.1 | H |
| | *Metrosideros* | 2 | 2 | 65 | 3.1 | 2 | 55 | 3.6 | H |
| | *Xanthomyrtus* | 1 | 1 | 25 | 4.0 | 1 | 25 | 4.0 | |
| **Nepenthaceae** | | 30 | 30 | 186 | 16.1 | 30 | 186 | 16.1 | |
| | *Nepenthes* | 30 | 30 | 186 | 16.1 | 30 | 186 | 16.1 | |
| **Onagraceae** | | 8 | 8 | 1775 | 0.5 | 8 | 828 | 1.0 | |
| | *Fuchsia* | 8 | 8 | 133 | 6.0 | 8 | 113 | 7.1 | |
| **Orchidaceae** | | 21169 | 21010 | 31300 | 67.1 | 20956 | 27793 | 75.4 | |
| | *Abdominea* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Acampe* | 8 | 8 | 8 | 100 | 8 | 8 | 100 | |
| | *Acianthera* | 286 | 223 | 224 | 99.6 | 221 | 221 | 100 | |
| | *Acineta* | 17 | 17 | 19 | 89.5 | 17 | 17 | 100 | |
| | *Acriopsis* | 9 | 9 | 9 | 100 | 9 | 9 | 100 | |
| | *Acrochaene* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Acrorchis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Ada* | 2 | 2 | 2 | 100 | 1 | 1 | 100 | |
| | *Adamantinia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Adenoncos* | 17 | 17 | 17 | 100 | 17 | 17 | 100 | |
| | *Adrorhizon* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Aerangis* | 58 | 51 | 56 | 91.1 | 51 | 53 | 96.2 | |
| | *Aeranthes* | 45 | 45 | 47 | 95.7 | 44 | 45 | 97.8 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Aerides* | 35 | 35 | 62 | 56.5 | 32 | 32 | 100 |
| *Aeridostachya* | 1 | 1 | 0 | | 1 | 0 | |
| *Aetheorhyncha* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Aganisia* | 4 | 4 | 6 | 66.7 | 4 | 4 | 100 |
| *Aglossorrhyncha* | 13 | 13 | 13 | 100 | 13 | 13 | 100 |
| *Agrostophyllum* | 131 | 102 | 104 | 98.1 | 102 | 102 | 100 |
| *Alamania* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Alatiliparis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Ambrella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Amesiella* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Amoana* | 2 | | 0 | | | 0 | |
| *Anathallis* | 165 | 153 | 153 | 100 | 153 | 153 | 100 |
| *Ancistrochilus* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Ancistrorhynchus* | 18 | 18 | 19 | 94.7 | 18 | 18 | 100 |
| *Andinia* | 73 | 13 | 13 | 100 | 13 | 13 | 100 |
| *Angraecopsis* | 22 | 22 | 22 | 100 | 22 | 22 | 100 |
| *Angraecum* | 219 | 218 | 242 | 90.1 | 217 | 221 | 98.2 |
| *Anguloa* | 1 | 1 | 16 | 6.3 | 1 | 13 | 7.7 |
| *Ansellia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Anthogonium* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Appendicula* | 140 | 134 | 142 | 94.4 | 134 | 136 | 98.5 |
| *Arachnis* | 13 | 11 | 12 | 91.7 | 11 | 12 | 91.7 |
| *Archivea* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Armodorum* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Arnottia* | 1 | 1 | 4 | 25.0 | 1 | 4 | 25.0 |
| *Arpophyllum* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Artorima* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Ascidieria* | 8 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Ascocentrum* | 13 | 13 | 13 | 100 | 13 | 13 | 100 |
| *Ascochilopsis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |

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|---|---|---|---|---|---|---|---|
| *Ascochilus* | 6 | 6 | 7 | 85.7 | 6 | 6 | 100 |
| *Ascoglossum* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Aspasia* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Aspidogyne* | 1 | 1 | 46 | 2.2 | 1 | 46 | 2.2 |
| *Barbosella* | 19 | 19 | 20 | 95.0 | 19 | 19 | 100 |
| *Barkeria* | 16 | 16 | 17 | 94.1 | 16 | 17 | 94.1 |
| *Batemannia* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Beclardia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Beloglottis* | 2 | 2 | 7 | 28.6 | 2 | 7 | 28.6 |
| *Benthamia* | 2 | 2 | 38 | 5.3 | 2 | 33 | 6.1 |
| *Benzingia* | 9 | 9 | 9 | 100 | 9 | 9 | 100 |
| *Biermannia* | 11 | 11 | 11 | 100 | 11 | 11 | 100 |
| *Bifrenaria* | 21 | 21 | 28 | 75.0 | 21 | 22 | 95.5 |
| *Bogoria* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Bolusiella* | 7 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Brachionidium* | 81 | 75 | 78 | 96.2 | 75 | 75 | 100 |
| *Brachypeza* | 12 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Bracisepalum* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Braemia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Brasiliorchis* | 15 | 15 | 15 | 100 | 15 | 15 | 100 |
| *Brassavola* | 24 | 22 | 25 | 88.0 | 22 | 23 | 95.7 |
| *Brassia* | 68 | 63 | 65 | 96.9 | 63 | 63 | 100 |
| *Bromheadia* | 30 | 30 | 30 | 100 | 30 | 30 | 100 |
| *Broughtonia* | 6 | 6 | 9 | 66.7 | 6 | 7 | 85.7 |
| *Bryobium* | 8 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Bulbophyllum* | 2043 | 1870 | 1921 | 97.3 | 1866 | 1884 | 99.0 |
| *Bulleyia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Caladenia* | 1 | 1 | 288 | 0.3 | 1 | 285 | 0.4 |
| *Calanthe* | 15 | 15 | 238 | 6.3 | 15 | 220 | 6.8 |
| *Callostylis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |

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|---|---|---|---|---|---|---|---|
| *Caluera* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Calymmanthera* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Calyptrochilum* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Camaridium* | 83 | 83 | 83 | 100 | 83 | 83 | 100 |
| *Campanulorchis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Campylocentrum* | 83 | 65 | 67 | 97.0 | 65 | 65 | 100 |
| *Capanemia* | 9 | 9 | 10 | 90.0 | 9 | 10 | 90.0 |
| *Cardiochilos* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Catasetum* | 156 | 156 | 215 | 72.6 | 156 | 194 | 80.4 |
| *Cattleya* | 108 | 108 | 265 | 40.8 | 108 | 186 | 58.1 |
| *Caucaea* | 15 | 9 | 9 | 100 | 9 | 9 | 100 |
| *Caularthron* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Centroglossa* | 5 | 5 | 6 | 83.3 | 5 | 6 | 83.3 |
| *Ceratocentron* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Ceratochilus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Ceratostylis* | 148 | 147 | 147 | 100 | 147 | 147 | 100 |
| *Chamaeangis* | 11 | 11 | 11 | 100 | 11 | 11 | 100 |
| *Chamaeanthus* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Chamelophyton* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Chaseella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Chaubardia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Chaubardiella* | 8 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Chauliodon* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Cheiradenia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Cheirostylis* | 2 | 2 | 55 | 3.6 | 2 | 54 | 3.7 |
| *Chelonistele* | 15 | 13 | 13 | 100 | 13 | 13 | 100 |
| *Chilopogon* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Chiloschista* | 20 | 20 | 21 | 95.2 | 20 | 20 | 100 |
| *Chondrorhyncha* | 7 | 7 | 8 | 87.5 | 7 | 7 | 100 |
| *Chondroscaphe* | 14 | 14 | 14 | 100 | 14 | 14 | 100 |

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|---|---|---|---|---|---|---|---|
| *Christensonella* | 17 | 17 | 17 | 100 | 17 | 17 | 100 |
| *Chroniochilus* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Chrysoglossum* | 3 | 3 | 4 | 75.0 | 3 | 4 | 75.0 |
| *Chysis* | 10 | 10 | 14 | 71.4 | 10 | 10 | 100 |
| *Chytroglossa* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Cirrhaea* | 7 | 7 | 12 | 58.3 | 7 | 7 | 100 |
| *Cischweinfia* | 11 | 11 | 11 | 100 | 11 | 11 | 100 |
| *Claderia* | 1 | 1 | 3 | 33.3 | 1 | 2 | 50.0 |
| *Cleisocentron* | 6 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Cleisomeria* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Cleisostoma* | 96 | 88 | 96 | 91.7 | 88 | 88 | 100 |
| *Cleisostomopsis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Clowesia* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Cochleanthes* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Coelia* | 3 | 3 | 5 | 60.0 | 3 | 5 | 60.0 |
| *Coeliopsis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Coelogyne* | 200 | 200 | 216 | 92.6 | 200 | 200 | 100 |
| *Comparettia* | 81 | 78 | 79 | 98.7 | 78 | 79 | 98.7 |
| *Conchidium* | 11 | 11 | 10 | 100 | 10 | 10 | 100 |
| *Constantia* | 6 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Cordiglottis* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Coryanthes* | 60 | 60 | 67 | 89.6 | 59 | 59 | 100 |
| *Corybas* | 1 | 1 | 136 | 0.7 | 1 | 133 | 0.8 |
| *Cottonia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Crepidium* | 9 | 7 | 260 | 2.7 | 7 | 260 | 2.7 |
| *Cribbia* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Crossoglossa* | 2 | 2 | 27 | 7.4 | 2 | 26 | 7.7 |
| *Cryptarrhena* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Cryptocentrum* | 20 | 20 | 20 | 100 | 20 | 20 | 100 |
| *Cryptochilus* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |

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|---|---|---|---|---|---|---|---|
| *Cryptopus* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Cryptopylos* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Cryptostylis* | 1 | 1 | 23 | 4.3 | 1 | 23 | 4.3 |
| *Cuitlauzina* | 8 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Cyclopogon* | 4 | 4 | 86 | 4.7 | 4 | 83 | 4.8 |
| *Cycnoches* | 34 | 34 | 36 | 94.4 | 34 | 34 | 100 |
| *Cylindrolobus* | 16 | 3 | 3 | 100 | 0 | 0 | |
| *Cymbidiella* | 2 | 2 | 3 | 66.7 | 2 | 3 | 66.7 |
| *Cymbidium* | 56 | 56 | 119 | 47.1 | 56 | 80 | 70.0 |
| *Cynorkis* | 2 | 2 | 168 | 1.2 | 2 | 158 | 1.3 |
| *Cyphochilus* | 1 | 1 | 8 | 12.5 | 1 | 8 | 12.5 |
| *Cypholoron* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Cypripedium* | 1 | 1 | 240 | 0.4 | 1 | 59 | 1.7 |
| *Cyrtidiorchis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Cyrtochiloides* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Cyrtochilum* | 179 | 135 | 141 | 95.7 | 135 | 138 | 97.8 |
| *Cyrtopodium* | 37 | 37 | 50 | 74.0 | 37 | 48 | 77.1 |
| *Cyrtorchis* | 19 | 18 | 19 | 94.7 | 18 | 18 | 100 |
| *Daiotyla* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Deceptor* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Dendrobium* | 1557 | 1485 | 1601 | 92.8 | 1484 | 1523 | 97.4 |
| *Dendrochilum* | 284 | 275 | 279 | 98.6 | 275 | 278 | 98.9 |
| *Dendrolirium* | 3 | 1 | 1 | 100 | 0 | 0 | |
| *Dendrophylax* | 15 | 14 | 14 | 100 | 14 | 14 | 100 |
| *Devogelia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Diaphananthe* | 34 | 23 | 23 | 100 | 22 | 22 | 100 |
| *Dichaea* | 122 | 119 | 123 | 96.7 | 119 | 120 | 99.2 |
| *Dickasonia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Dienia* | 1 | 1 | 6 | 16.7 | 1 | 6 | 16.7 |
| *Dilochia* | 5 | 5 | 8 | 62.5 | 5 | 8 | 62.5 |

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|---|---|---|---|---|---|---|---|
| *Dilochiopsis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Dilomilis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Dimerandra* | 8 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Dimorphorchis* | 8 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Dinema* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Dinklageella* | 3 | 3 | 4 | 75.0 | 3 | 4 | 75.0 |
| *Diodonopsis* | 6 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Diplocentrum* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Diploprora* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Dipodium* | 22 | 22 | 28 | 78.6 | 22 | 24 | 91.7 |
| *Disa* | 1 | 1 | 192 | 0.5 | 1 | 185 | 0.5 |
| *Disperis* | 1 | 1 | 82 | 1.2 | 1 | 79 | 1.3 |
| *Distylodon* | 2 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Domingoa* | 4 | 4 | 5 | 80.0 | 4 | 5 | 80.0 |
| *Draconanthes* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Dracula* | 138 | 128 | 132 | 97.0 | 128 | 130 | 98.5 |
| *Dresslerella* | 13 | 13 | 16 | 81.3 | 13 | 16 | 81.3 |
| *Dressleria* | 13 | 12 | 12 | 100 | 11 | 11 | 100 |
| *Dryadella* | 56 | 54 | 54 | 100 | 54 | 54 | 100 |
| *Dryadorchis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Drymoanthus* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Drymoda* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Dyakia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Earina* | 5 | 5 | 8 | 62.5 | 5 | 7 | 71.4 |
| *Echinorhyncha* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Echinosepala* | 14 | 11 | 11 | 100 | 11 | 11 | 100 |
| *Eclecticus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Eggelingia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Elleanthus* | 112 | 112 | 112 | 100 | 112 | 112 | 100 |
| *Eloyella* | 10 | 10 | 10 | 100 | 10 | 10 | 100 |

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|---|---|---|---|---|---|---|---|
| *Embreea* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Encyclia* | 177 | 160 | 188 | 85.1 | 160 | 172 | 93.0 |
| *Entomophobia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Eparmatostigma* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Epiblastus* | 21 | 21 | 24 | 87.5 | 21 | 22 | 95.5 |
| *Epidendrum* | 1305 | 1303 | 1560 | 83.5 | 1303 | 1434 | 90.9 |
| *Epilyna* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Epistephium* | 1 | 1 | 22 | 4.5 | 1 | 21 | 4.8 |
| *Erasanthe* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Eria* | 241 | 234 | 258 | 90.7 | 234 | 238 | 98.3 |
| *Eriodes* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Eriopsis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Erycina* | 7 | 7 | 8 | 87.5 | 7 | 7 | 100 |
| *Esmeralda* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Euanthe* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Euchile* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Eulophiella* | 3 | 3 | 7 | 42.9 | 3 | 5 | 60.0 |
| *Euryblema* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Eurychone* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Eurystyles* | 19 | 19 | 21 | 90.5 | 19 | 20 | 95.0 |
| *Fernandezia* | 58 | 52 | 52 | 100 | 51 | 51 | 100 |
| *Frondaria* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Galeandra* | 39 | 39 | 43 | 90.7 | 39 | 39 | 100 |
| *Galeottia* | 12 | 12 | 14 | 85.7 | 12 | 12 | 100 |
| *Gastrochilus* | 59 | 55 | 64 | 85.9 | 55 | 57 | 96.5 |
| *Gastrorchis* | 3 | 3 | 8 | 37.5 | 3 | 8 | 37.5 |
| *Geesinkorchis* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Genyorchis* | 10 | 10 | 10 | 100 | 10 | 10 | 100 |
| *Glomera* | 167 | 130 | 133 | 97.7 | 130 | 131 | 99.2 |
| *Gomesa* | 125 | 117 | 134 | 87.3 | 117 | 124 | 94.4 |

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|---|---|---|---|---|---|---|---|
| *Gomphichis* | 2 | 2 | 25 | 8.0 | 2 | 24 | 8.3 |
| *Gongora* | 76 | 74 | 77 | 96.1 | 74 | 74 | 100 |
| *Goodyera* | 4 | 4 | 113 | 3.5 | 4 | 99 | 4.0 |
| *Grammangis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Grammatophyllum* | 12 | 12 | 14 | 85.7 | 12 | 12 | 100 |
| *Grandiphyllum* | 8 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Graphorkis* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Grastidium* | 1 | 1 | 2 | 50.0 | 1 | 1 | 100 |
| *Grobya* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Grosourdya* | 23 | 11 | 11 | 100 | 11 | 11 | 100 |
| *Guanchezia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Guarianthe* | 4 | 4 | 5 | 80.0 | 4 | 5 | 80.0 |
| *Gunnarella* | 9 | 9 | 9 | 100 | 9 | 9 | 100 |
| *Gynoglottis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Habenaria* | 1 | 1 | 902 | <0.1 | 1 | 837 | 0.1 |
| *Hagsatera* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Haraella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Hederorkis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Helleriella* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Herminium* | 1 | 1 | 27 | 3.7 | 1 | 22 | 4.5 |
| *Heterotaxis* | 13 | 13 | 13 | 100 | 13 | 13 | 100 |
| *Hintonella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Hippeophyllum* | 10 | 10 | 10 | 100 | 10 | 10 | 100 |
| *Hoehneella* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Hofmeisterella* | 3 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Holcoglossum* | 18 | 14 | 14 | 100 | 14 | 14 | 100 |
| *Homalopetalum* | 9 | 8 | 9 | 88.9 | 8 | 8 | 100 |
| *Horichia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Horvatia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Houlletia* | 8 | 8 | 11 | 72.7 | 8 | 9 | 88.9 |

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|---|---|---|---|---|---|---|---|
| *Huntleya* | 16 | 14 | 15 | 93.3 | 14 | 14 | 100 |
| *Hygrochilus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Hylaeorchis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Hymenorchis* | 11 | 11 | 12 | 91.7 | 11 | 12 | 91.7 |
| *India* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Inti* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Ionopsis* | 6 | 6 | 8 | 75.0 | 6 | 6 | 100 |
| *Isabelia* | 3 | 3 | 4 | 75.0 | 3 | 4 | 75.0 |
| *Ischnogyne* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Isochilus* | 13 | 13 | 14 | 92.9 | 13 | 13 | 100 |
| *Ixyophora* | 6 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Jacquiniella* | 12 | 12 | 12 | 100 | 12 | 12 | 100 |
| *Jejewoodia* | 6 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Jejosephia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Jumellea* | 60 | 60 | 67 | 89.6 | 59 | 64 | 92.2 |
| *Kefersteinia* | 71 | 70 | 72 | 97.2 | 70 | 70 | 100 |
| *Kegeliella* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Koellensteinia* | 12 | 12 | 17 | 70.6 | 12 | 17 | 70.6 |
| *Kraenzlinella* | 10 | 10 | 10 | 100 | 9 | 9 | 100 |
| *Lacaena* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Laelia* | 25 | 24 | 62 | 38.7 | 24 | 24 | 100 |
| *Lankesterella* | 11 | 11 | 11 | 100 | 11 | 11 | 100 |
| *Lemurella* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Lemurorchis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Leochilus* | 12 | 12 | 14 | 85.7 | 12 | 12 | 100 |
| *Lepanthes* | 1165 | 1095 | 1135 | 96.5 | 1090 | 1092 | 99.8 |
| *Lepanthopsis* | 47 | 43 | 45 | 95.6 | 43 | 43 | 100 |
| *Leptotes* | 9 | 9 | 10 | 90.0 | 9 | 9 | 100 |
| *Liparis* | 367 | 367 | 452 | 81.4 | 367 | 428 | 86.0 |
| *Listrostachys* | 1 | 1 | 4 | 25.0 | 1 | 1 | 100 |

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|---|---|---|---|---|---|---|---|
| *Lockhartia* | 33 | 28 | 30 | 93.3 | 28 | 28 | 100 |
| *Loefgrenianthus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Lueckelia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Lueddemannia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Luisia* | 43 | 40 | 42 | 95.2 | 40 | 40 | 100 |
| *Lycaste* | 35 | 34 | 56 | 60.7 | 34 | 45 | 75.6 |
| *Lycomormium* | 6 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Macradenia* | 13 | 11 | 12 | 91.7 | 11 | 11 | 100 |
| *Macroclinium* | 45 | 41 | 42 | 97.6 | 41 | 42 | 97.6 |
| *Macropodanthus* | 10 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Malaxis* | 6 | 6 | 200 | 3.0 | 6 | 183 | 3.3 |
| *Malleola* | 34 | 34 | 34 | 100 | 34 | 34 | 100 |
| *Mapinguari* | 4 | 4 | 5 | 80.0 | 4 | 5 | 80.0 |
| *Margelliantha* | 6 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Masdevallia* | 638 | 597 | 625 | 95.5 | 596 | 598 | 99.7 |
| *Maxillaria* | 400 | 321 | 358 | 89.7 | 317 | 319 | 99.4 |
| *Maxillariella* | 45 | 45 | 46 | 97.8 | 45 | 46 | 97.8 |
| *Mediocalcar* | 17 | 17 | 18 | 94.4 | 17 | 17 | 100 |
| *Megalotus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Meiracyllium* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Mesospinidium* | 1 | 1 | 2 | 50.0 | | 0 | |
| *Microchilus* | 1 | 1 | 137 | 0.7 | 1 | 137 | 0.7 |
| *Microcoelia* | 33 | 30 | 30 | 100 | 30 | 30 | 100 |
| *Microepidendrum* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Micropera* | 22 | 22 | 23 | 95.7 | 21 | 21 | 100 |
| *Microsaccus* | 12 | 12 | 12 | 100 | 12 | 12 | 100 |
| *Microtatorchis* | 51 | 51 | 51 | 100 | 51 | 51 | 100 |
| *Microterangis* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Miltonia* | 12 | 12 | 21 | 57.1 | 12 | 18 | 66.7 |
| *Miltoniopsis* | 5 | 5 | 6 | 83.3 | 5 | 5 | 100 |

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|---|---|---|---|---|---|---|---|
| *Mobilabium* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Monomeria* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Mormodes* | 83 | 83 | 93 | 89.2 | 83 | 83 | 100 |
| *Mormolyca* | 26 | 26 | 27 | 96.3 | 26 | 26 | 100 |
| *Muscarella* | 7 | 3 | 3 | 100 | 0 | 0 | |
| *Mycaranthes* | 35 | 35 | 36 | 97.2 | 35 | 36 | 97.2 |
| *Myoxanthus* | 50 | 48 | 49 | 98.0 | 48 | 48 | 100 |
| *Myrmecophila* | 10 | 10 | 13 | 76.9 | 10 | 11 | 90.9 |
| *Mystacidium* | 10 | 10 | 12 | 83.3 | 10 | 10 | 100 |
| *Nabaluia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Neobathiea* | 6 | 6 | 6 | 100 | 5 | 5 | 100 |
| *Neocogniauxia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Neofinetia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Neogardneria* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Neogyna* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Neomoorea* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Nephrangis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Nidema* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Nitidobulbon* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Nohawilliamsia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Notheria* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Nothodoritis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Notylia* | 56 | 56 | 59 | 94.9 | 56 | 56 | 100 |
| *Notyliopsis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Oberonia* | 333 | 322 | 330 | 97.6 | 322 | 324 | 99.4 |
| *Octarrhena* | 54 | 52 | 52 | 100 | 52 | 52 | 100 |
| *Octomeria* | 166 | 160 | 174 | 92.0 | 160 | 162 | 98.8 |
| *Oeceoclades* | 1 | 1 | 41 | 2.4 | 1 | 38 | 2.6 |
| *Oeonia* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Oeoniella* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |

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|---|---|---|---|---|---|---|---|
| *Oestlundia* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Oliveriana* | 13 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Omoea* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Oncidium* | 342 | 335 | 393 | 85.2 | 334 | 341 | 97.9 |
| *Ophioglossella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Oreorchis* | 1 | 1 | 20 | 5.0 | 1 | 16 | 6.3 |
| *Orleanesia* | 9 | 9 | 9 | 100 | 9 | 9 | 100 |
| *Ornithidium* | 56 | 56 | 63 | 88.9 | 56 | 57 | 98.2 |
| *Ornithocephalus* | 56 | 56 | 58 | 96.6 | 56 | 56 | 100 |
| *Ornithochilus* | 3 | 3 | 5 | 60.0 | 3 | 3 | 100 |
| *Ossiculum* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Otochilus* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Otoglossum* | 21 | 13 | 15 | 86.7 | 13 | 15 | 86.7 |
| *Otostylis* | 1 | 1 | 4 | 25.0 | 1 | 4 | 25.0 |
| *Oxystophyllum* | 36 | 36 | 36 | 100 | 36 | 36 | 100 |
| *Pabstia* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Pabstiella* | 73 | 28 | 35 | 80.0 | 28 | 29 | 96.6 |
| *Pachyphyllum* | 1 | 1 | 4 | 25.0 | | 0 | |
| *Panisea* | 12 | 10 | 11 | 90.9 | 10 | 11 | 90.9 |
| *Paphinia* | 16 | 16 | 16 | 100 | 16 | 16 | 100 |
| *Paphiopedilum* | 7 | 7 | 136 | 5.1 | 7 | 118 | 5.9 |
| *Papilionanthe* | 9 | 9 | 11 | 81.8 | 9 | 11 | 81.8 |
| *Papillilabium* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Paralophia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Paraphalaenopsis* | 4 | 4 | 5 | 80.0 | 4 | 5 | 80.0 |
| *Parapteroceras* | 8 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Pedilochilus* | 38 | 38 | 38 | 100 | 36 | 36 | 100 |
| *Pelatantheria* | 8 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Pelexia* | 1 | 1 | 79 | 1.3 | 1 | 78 | 1.3 |
| *Penkimia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |

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|---|---|---|---|---|---|---|---|
| *Pennilabium* | 18 | 15 | 15 | 100 | 15 | 15 | 100 |
| *Peristeranthus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Peristeria* | 13 | 13 | 14 | 92.9 | 13 | 13 | 100 |
| *Pescatoria* | 25 | 25 | 30 | 83.3 | 25 | 26 | 96.2 |
| *Phaius* | 1 | 1 | 58 | 1.7 | 1 | 45 | 2.2 |
| *Phalaenopsis* | 74 | 61 | 77 | 79.2 | 61 | 70 | 87.1 |
| *Phloeophila* | 12 | 11 | 12 | 91.7 | 11 | 11 | 100 |
| *Pholidota* | 38 | 38 | 45 | 84.4 | 38 | 39 | 97.4 |
| *Phragmipedium* | 8 | 8 | 36 | 22.2 | 8 | 27 | 29.6 |
| *Phragmorchis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Phreatia* | 220 | 211 | 214 | 98.6 | 211 | 211 | 100 |
| *Phyllorchis* | 1 | 1 | 32 | 3.1 | 1 | 12 | 8.3 |
| *Phymatidium* | 10 | 10 | 11 | 90.9 | 10 | 10 | 100 |
| *Physoceras* | 1 | 1 | 12 | 8.3 | 1 | 12 | 8.3 |
| *Pinalia* | 116 | 101 | 106 | 95.3 | 101 | 106 | 95.3 |
| *Pityphyllum* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Platanthera* | 3 | 3 | 172 | 1.7 | 3 | 152 | 2.0 |
| *Platyrhiza* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Platystele* | 112 | 101 | 102 | 99.0 | 101 | 101 | 100 |
| *Plectorrhiza* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Plectrelminthus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Plectrophora* | 10 | 10 | 10 | 100 | 10 | 10 | 100 |
| *Pleione* | 12 | 12 | 28 | 42.9 | 12 | 26 | 46.2 |
| *Pleurothallis* | 618 | 559 | 615 | 90.9 | 556 | 557 | 99.8 |
| *Pleurothallopsis* | 18 | 18 | 18 | 100 | 18 | 18 | 100 |
| *Plocoglottis* | 1 | 1 | 42 | 2.4 | 1 | 41 | 2.4 |
| *Poaephyllum* | 7 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Podangis* | 2 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Podochilus* | 63 | 61 | 66 | 92.4 | 61 | 62 | 98.4 |
| *Polycycnis* | 17 | 17 | 17 | 100 | 17 | 17 | 100 |

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|---|---|---|---|---|---|---|---|
| *Polyotidium* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Polystachya* | 249 | 241 | 253 | 95.3 | 241 | 245 | 98.4 |
| *Pomatocalpa* | 25 | 25 | 25 | 100 | 25 | 25 | 100 |
| *Ponera* | 8 | 8 | 14 | 57.1 | 8 | 8 | 100 |
| *Ponerorchis* | 1 | 1 | 20 | 5.0 | 1 | 20 | 5.0 |
| *Ponthieva* | 2 | 2 | 68 | 2.9 | 2 | 65 | 3.1 |
| *Porpax* | 21 | 13 | 13 | 100 | 13 | 13 | 100 |
| *Porphyrodesme* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Porphyroglottis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Porroglossum* | 53 | 43 | 43 | 100 | 43 | 43 | 100 |
| *Porrorhachis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Prescottia* | 2 | 2 | 28 | 7.1 | 2 | 26 | 7.7 |
| *Promenaea* | 19 | 18 | 18 | 100 | 18 | 18 | 100 |
| *Prosthechea* | 116 | 116 | 119 | 97.5 | 116 | 118 | 98.3 |
| *Pseuderia* | 20 | 20 | 20 | 100 | 20 | 20 | 100 |
| *Pseudocentrum* | 2 | 2 | 7 | 28.6 | 2 | 7 | 28.6 |
| *Pseudolaelia* | 16 | 16 | 19 | 84.2 | 16 | 19 | 84.2 |
| *Psychilis* | 15 | 15 | 17 | 88.2 | 15 | 17 | 88.2 |
| *Psychopsis* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Pteroceras* | 27 | 27 | 27 | 100 | 27 | 27 | 100 |
| *Pterostemma* | 4 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Pygmaeorchis* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Quekettia* | 6 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Quisqueya* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Rangaeris* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Rauhiella* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Renanthera* | 21 | 20 | 22 | 90.9 | 20 | 20 | 100 |
| *Restrepia* | 58 | 53 | 55 | 96.4 | 53 | 53 | 100 |
| *Restrepiella* | 4 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Rhaesteria* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |

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|---|---|---|---|---|---|---|---|
| *Rhetinantha* | 14 | 14 | 14 | 100 | 14 | 14 | 100 |
| *Rhinerrhiza* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Rhinerrhizopsis* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Rhipidoglossum* | 37 | 35 | 35 | 100 | 35 | 35 | 100 |
| *Rhynchogyna* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Rhyncholaelia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Rhynchostele* | 17 | 17 | 20 | 85.0 | 17 | 20 | 85.0 |
| *Rhynchostylis* | 4 | 3 | 4 | 75.0 | 3 | 3 | 100 |
| *Ridleyella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Robiquetia* | 82 | 45 | 45 | 100 | 45 | 45 | 100 |
| *Rodriguezia* | 50 | 50 | 55 | 90.9 | 50 | 50 | 100 |
| *Rossioglossum* | 9 | 9 | 9 | 100 | 9 | 9 | 100 |
| *Rudolfiella* | 6 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Saccoglossum* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Saccolabiopsis* | 14 | 14 | 15 | 93.3 | 14 | 15 | 93.3 |
| *Saccolabium* | 5 | 5 | 18 | 27.8 | 5 | 5 | 100 |
| *Samarorchis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Sanderella* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Sansonia* | 1 | 1 | | | 1 | | |
| *Santanderella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Santotomasia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Sarcanthopsis* | 6 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Sarcochilus* | 25 | 25 | 29 | 86.2 | 25 | 25 | 100 |
| *Sarcoglyphis* | 15 | 2 | 12 | 16.7 | 2 | 12 | 16.7 |
| *Sarcophyton* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Sarcostoma* | 5 | 5 | 6 | 83.3 | 5 | 5 | 100 |
| *Saundersia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Sauvetrea* | 11 | 11 | 11 | 100 | 11 | 11 | 100 |
| *Scaphosepalum* | 51 | 46 | 47 | 97.9 | 46 | 47 | 97.9 |
| *Scaphyglottis* | 77 | 69 | 79 | 87.3 | 69 | 69 | 100 |

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|---|---|---|---|---|---|---|---|
| *Schistotylus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Schlimia* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Schoenorchis* | 28 | 24 | 25 | 96.0 | 24 | 24 | 100 |
| *Schomburgkia* | 1 | 1 | 4 | 25.0 | 1 | 2 | 50.0 |
| *Schunkea* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Scuticaria* | 12 | 10 | 11 | 90.9 | 10 | 10 | 100 |
| *Sedirea* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Seegeriella* | 3 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Seidenfadenia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Seidenfadeniella* | 3 | 1 | 2 | 50.0 | 1 | 2 | 50.0 |
| *Sertifera* | 2 | 2 | 7 | 28.6 | 2 | 7 | 28.6 |
| *Sievekingia* | 16 | 16 | 17 | 94.1 | 16 | 16 | 100 |
| *Singchia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Sirhookera* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Smithsonia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Smitinandia* | 3 | 3 | 3 | 100 | 3 | 3 | 100 |
| *Sobennikoffia* | 2 | 2 | 4 | 50.0 | 2 | 4 | 50.0 |
| *Sobralia* | 31 | 30 | 161 | 18.6 | 30 | 150 | 20.0 |
| *Solenangis* | 8 | 8 | 8 | 100 | 8 | 8 | 100 |
| *Solenidium* | 3 | 3 | 4 | 75.0 | 3 | 3 | 100 |
| *Solenocentrum* | 1 | 1 | 4 | 25.0 | 1 | 4 | 25.0 |
| *Soterosanthus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Spathoglottis* | 4 | 4 | 51 | 7.8 | 4 | 49 | 8.2 |
| *Specklinia* | 158 | 135 | 139 | 97.1 | 135 | 135 | 100 |
| *Sphyrarhynchus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Spiranthes* | 1 | 1 | 62 | 1.6 | 1 | 39 | 2.6 |
| *Spongiola* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Stalkya* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Stanhopea* | 76 | 62 | 88 | 70.5 | 62 | 68 | 91.2 |
| *Staurochilus* | 14 | 14 | 14 | 100 | 14 | 14 | 100 |

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|---|---|---|---|---|---|---|---|
| *Stelis* | 1130 | 886 | 912 | 97.1 | 884 | 887 | 99.7 |
| *Stenia* | 22 | 22 | 22 | 100 | 22 | 22 | 100 |
| *Stenorrhynchos* | 1 | 1 | 15 | 6.7 | 1 | 7 | 14.3 |
| *Stenotyla* | 9 | 9 | 9 | 100 | 9 | 9 | 100 |
| *Stereochilus* | 7 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Stichorkis* | 18 | 8 | 9 | 88.9 | 8 | 8 | 100 |
| *Stolzia* | 16 | 16 | 16 | 100 | 15 | 15 | 100 |
| *Suarezia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Sudamerlycaste* | 33 | 33 | 45 | 73.3 | 33 | 45 | 73.3 |
| *Summerhayesia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Sunipia* | 24 | 24 | 24 | 100 | 24 | 24 | 100 |
| *Sutrina* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Systeloglossum* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Taeniophyllum* | 233 | 185 | 188 | 98.4 | 185 | 185 | 100 |
| *Taeniorrhiza* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Tainia* | 6 | 6 | 34 | 17.6 | 6 | 32 | 18.8 |
| *Teagueia* | 18 | 13 | 13 | 100 | 13 | 13 | 100 |
| *Telipogon* | 229 | 207 | 215 | 96.3 | 206 | 206 | 100 |
| *Tetramicra* | 1 | 1 | 15 | 6.7 | 1 | 14 | 7.1 |
| *Teuscheria* | 10 | 7 | 7 | 100 | 7 | 7 | 100 |
| *Theana* | 1 | 1 | | | 1 | | |
| *Thecopus* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Thecostele* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Thelasis* | 28 | 26 | 26 | 100 | 26 | 26 | 100 |
| *Thrixspermum* | 186 | 160 | 163 | 98.2 | 160 | 161 | 99.4 |
| *Thunia* | 3 | 3 | 7 | 42.9 | 3 | 5 | 60.0 |
| *Thysanoglossa* | 2 | 2 | 3 | 66.7 | 2 | 3 | 66.7 |
| *Tipularia* | 1 | 1 | 8 | 12.5 | 1 | 7 | 14.3 |
| *Tolumnia* | 25 | 25 | 31 | 80.6 | 25 | 31 | 80.6 |
| *Tomzanonia* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |

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|---|---|---|---|---|---|---|---|
| *Trachoma* | 8 | 8 | | | 8 | | |
| *Trevoria* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |
| *Trias* | 13 | 13 | 14 | 92.9 | 13 | 14 | 92.9 |
| *Triceratorhynchus* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Trichocentrum* | 92 | 64 | 73 | 87.7 | 63 | 65 | 96.9 |
| *Trichoceros* | 10 | 10 | 11 | 90.9 | 10 | 10 | 100 |
| *Trichoglottis* | 77 | 69 | 72 | 95.8 | 69 | 69 | 100 |
| *Trichopilia* | 45 | 45 | 49 | 91.8 | 45 | 45 | 100 |
| *Trichosalpinx* | 124 | 113 | 117 | 96.6 | 112 | 112 | 100 |
| *Trichotosia* | 82 | 78 | 78 | 100 | 78 | 78 | 100 |
| *Tridactyle* | 50 | 47 | 47 | 100 | 47 | 47 | 100 |
| *Trigonidium* | 13 | 13 | 14 | 92.9 | 13 | 13 | 100 |
| *Trisetella* | 24 | 23 | 23 | 100 | 23 | 23 | 100 |
| *Trizeuxis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Tuberolabium* | 18 | 18 | 18 | 100 | 18 | 18 | 100 |
| *Uncifera* | 6 | 6 | 6 | 100 | 6 | 6 | 100 |
| *Vanda* | 81 | 56 | 66 | 84.8 | 56 | 60 | 93.3 |
| *Vandopsis* | 3 | 3 | 6 | 50.0 | 3 | 4 | 75.0 |
| *Vanilla* | 2 | 2 | 122 | 1.6 | 2 | 106 | 1.9 |
| *Vasqueziella* | 1 | 1 | 1 | 100 | 1 | 1 | 100 |
| *Ventricularia* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Vitekorchis* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Warczewiczella* | 11 | 11 | 13 | 84.6 | 11 | 11 | 100 |
| *Warmingia* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Warrea* | 2 | 2 | 3 | 66.7 | 2 | 3 | 66.7 |
| *Warreella* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Warreopsis* | 4 | 4 | 4 | 100 | 4 | 4 | 100 |
| *Xenikophyton* | 2 | 2 | 2 | 100 | 2 | 2 | 100 |
| *Xylobium* | 38 | 33 | 33 | 100 | 31 | 31 | 100 |
| *Ypsilopus* | 5 | 5 | 5 | 100 | 5 | 5 | 100 |

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|---|---|---|---|---|---|---|---|---|---|
| | *Ypsilorchis* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Zelenkoa* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Zootrophion* | 28 | 21 | 22 | 95.5 | 21 | 21 | 100 | |
| | *Zygopetalum* | 11 | 11 | 27 | 40.7 | 11 | 15 | 73.3 | |
| | *Zygosepalum* | 8 | 8 | 8 | 100 | 8 | 8 | 100 | |
| | *Zygostates* | 24 | 22 | 22 | 100 | 22 | 22 | 100 | |
| **Pandanaceae** | | 7 | 7 | 1086 | 0.6 | 7 | 1062 | 0.7 | |
| | *Benstonea* | 4 | 4 | 0 | | 4 | 0 | | |
| | *Freycinetia* | 1 | 1 | 310 | 0.3 | 1 | 308 | 0.3 | |
| | *Pandanus* | 2 | 2 | 767 | 0.3 | 2 | 746 | 0.3 | |
| **Paulowniaceae** | | 2 | 2 | 18 | 11.1 | 1 | 9 | 11.1 | H |
| | *Wightia* | 2 | 2 | 6 | 33.3 | 1 | 1 | 100 | H |
| **Phyllonomaceae** | | 1 | 1 | 5 | 20.0 | 1 | 5 | 20.0 | |
| | *Phyllonoma* | 1 | 1 | 5 | 20.0 | 1 | 5 | 20.0 | |
| **Piperaceae** | | 661 | 658 | 4942 | 13.3 | 509 | 2656 | 19.2 | |
| | *Manekia* | 1 | 1 | 6 | 16.7 | 1 | 5 | 20.0 | |
| | *Peperomia* | 659 | 656 | 1868 | 35.1 | 507 | 1160 | 43.7 | |
| | *Piperanthera* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| **Pittosporaceae** | | 3 | 3 | 472 | 0.6 | 2 | 170 | 1.2 | |
| | *Pittosporum* | 3 | 3 | 345 | 0.9 | 2 | 110 | 1.8 | |
| **Poaceae** | | 1 | | 14789 | <0.1 | | 11548 | <0.1 | |
| | *Tripogon* | 1 | | 48 | <0.1 | | 46 | <0.1 | |
| **Primulaceae** | | 8 | 8 | 4947 | 0.2 | 8 | 2787 | 0.3 | |
| | *Cybianthus* | 7 | 7 | 173 | 4.0 | 7 | 160 | 4.4 | |
| | *Myrsine* | 1 | 1 | 301 | 0.3 | 1 | 131 | 0.8 | |
| **Rapateaceae** | | 6 | 5 | 98 | 5.1 | 5 | 95 | 5.3 | |
| | *Epidryos* | 4 | 3 | 3 | 100 | 3 | 3 | 100 | |
| | *Stegolepis* | 2 | 2 | 33 | 6.1 | 2 | 33 | 6.1 | |
| **Rosaceae** | | 6 | 5 | 19262 | <0.1 | 4 | 4820 | 0.1 | H |
| | *Sorbus* | 6 | 5 | 537 | 0.7 | 4 | 243 | 1.2 | H |

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|---|---|---|---|---|---|---|---|---|---|
| **Rubiaceae** | | 263 | 253 | 15103 | 1.7 | 251 | 13668 | 1.8 | |
| | *Acranthera* | 1 | 1 | 40 | 2.5 | 1 | 38 | 2.6 | |
| | *Aidia* | 1 | 1 | 55 | 1.8 | 1 | 55 | 1.8 | |
| | *Anthorrhiza* | 9 | 9 | 9 | 100 | 9 | 9 | 100 | |
| | *Argostemma* | 2 | 2 | 169 | 1.2 | 2 | 163 | 1.2 | |
| | *Balmea* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Chassalia* | 3 | 3 | 115 | 2.6 | 3 | 112 | 2.7 | |
| | *Coprosma* | 2 | 2 | 125 | 1.6 | 2 | 118 | 1.7 | |
| | *Cosmibuena* | 3 | 3 | 5 | 60.0 | 3 | 4 | 75.0 | H |
| | *Didymochlamys* | 2 | 2 | 3 | 66.7 | 2 | 2 | 100 | |
| | *Gardenia* | 1 | 1 | 163 | 0.6 | 1 | 134 | 0.7 | |
| | *Hillia* | 22 | 22 | 30 | 73.3 | 21 | 24 | 87.5 | |
| | *Hoffmannia* | 2 | 2 | 139 | 1.4 | 2 | 131 | 1.5 | |
| | *Hydnophytum* | 96 | 94 | 94 | 100 | 94 | 94 | 100 | |
| | *Hymenodictyon* | 4 | 4 | 23 | 17.4 | 4 | 23 | 17.4 | |
| | *Ladenbergia* | 1 | 1 | 41 | 2.4 | 1 | 35 | 2.9 | |
| | *Lecananthus* | 3 | 3 | 3 | 100 | 3 | 3 | 100 | |
| | *Leucocodon* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| | *Manettia* | 1 | 1 | 132 | 0.8 | 1 | 123 | 0.8 | |
| | *Mussaenda* | 1 | 1 | 198 | 0.5 | 1 | 184 | 0.5 | |
| | *Mycetia* | 1 | 1 | 46 | 2.2 | 1 | 45 | 2.2 | |
| | *Myrmecodia* | 27 | 27 | 27 | 100 | 27 | 27 | 100 | |
| | *Myrmephytum* | 5 | 5 | 5 | 100 | 5 | 5 | 100 | |
| | *Neohymenopogon* | 1 | 1 | 3 | 33.3 | 1 | 3 | 33.3 | |
| | *Notopleura* | 13 | 13 | 102 | 12.7 | 13 | 102 | 12.7 | |
| | *Pentapterygium* | 1 | 1 | 2 | 50.0 | | 0 | | |
| | *Psychotria* | 2 | 2 | 1989 | <0.1 | 2 | 1865 | 0.1 | |
| | *Rudgea* | 1 | 1 | 141 | 0.7 | 1 | 133 | 0.8 | |
| | *Schradera* | 13 | 13 | 56 | 23.2 | 13 | 55 | 23.6 | |
| | *Squamellaria* | 12 | 4 | 4 | 100 | 4 | 4 | 100 | |

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|---|---|---|---|---|---|---|---|---|---|
| | *Timonius* | 31 | 31 | 182 | 17.0 | 31 | 182 | 17.0 | H |
| **Schlegeliaceae** | | 16 | 16 | 41 | 39.0 | 16 | 37 | 43.2 | |
| | *Gibsoniothamnus* | 12 | 12 | 12 | 100 | 12 | 12 | 100 | |
| | *Schlegelia* | 4 | 4 | 27 | 14.8 | 4 | 23 | 17.4 | |
| **Scrophulariaceae** | | 1 | 1 | 3815 | <0.1 | 1 | 1545 | 0.1 | |
| | *Dermatobotrys* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | |
| **Solanaceae** | | 52 | 52 | 2467 | 2.1 | 49 | 2433 | 2.0 | |
| | *Dyssochroma* | 1 | 1 | 1 | 100 | 1 | 1 | 100 | H |
| | *Juanulloa* | 10 | 10 | 11 | 90.9 | 10 | 11 | 90.9 | |
| | *Lycianthes* | 5 | 5 | 98 | 5.1 | 4 | 98 | 4.1 | H |
| | *Markea* | 12 | 12 | 22 | 54.5 | 12 | 22 | 54.5 | H |
| | *Merinthopodium* | 3 | 3 | 3 | 100 | 3 | 3 | 100 | |
| | *Salpichroa* | 1 | 1 | 14 | 7.1 | | 14 | <0.1 | |
| | *Schultesianthus* | 7 | 7 | 8 | 87.5 | 7 | 8 | 87.5 | |
| | *Solandra* | 4 | 4 | 12 | 33.3 | 4 | 10 | 40.0 | |
| | *Solanum* | 4 | 4 | 1203 | 0.3 | 4 | 1203 | 0.3 | |
| | *Trianaea* | 5 | 5 | 5 | 100 | 4 | 5 | 80.0 | |
| **Urticaceae** | | 83 | 83 | 3353 | 2.5 | 73 | 1465 | 5.0 | |
| | *Coussapoa* | 39 | 39 | 51 | 76.5 | 39 | 48 | 81.3 | H |
| | *Elatostema* | 12 | 12 | 597 | 2.0 | 11 | 525 | 2.1 | |
| | *Pilea* | 13 | 13 | 683 | 1.9 | 13 | 279 | 4.7 | |
| | *Poikilospermum* | 6 | 6 | 41 | 14.6 | 4 | 4 | 100 | H |
| | *Procris* | 9 | 9 | 77 | 11.7 | 2 | 2 | 100 | |
| | *Urera* | 4 | 4 | 97 | 4.1 | 4 | 43 | 9.3 | |
| **Zingiberaceae** | | 33 | 32 | 1689 | 1.9 | 32 | 1587 | 2.0 | |
| | *Alpinia* | 1 | | 253 | <0.1 | | 244 | <0.1 | |
| | *Amomum* | 4 | 4 | 196 | 2.0 | 4 | 179 | 2.2 | |
| | *Burbidgea* | 5 | 5 | 5 | 100 | 5 | 5 | 100 | |
| | *Cautleya* | 2 | 2 | 2 | 100 | 2 | 2 | 100 | |
| | *Globba* | 1 | 1 | 102 | 1.0 | 1 | 98 | 1.0 | |

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|---|---|---|---|---|---|---|---|---|
| | *Hedychium* | 15 | 15 | 99 | 15.2 | 15 | 93 | 16.1 |
| | *Rhynchanthus* | 4 | 4 | 5 | 80.0 | 4 | 4 | 100 |
| | *Riedelia* | 1 | 1 | 78 | 1.3 | 1 | 75 | 1.3 |
| **“gymnosperms”** | | 2 | 2 | 1288 | 0.2 | 2 | 1103 | 0.2 |
| **Zamiaceae** | | 2 | 2 | 230 | 0.9 | 2 | 215 | 0.9 |
| | *Zamia* | 2 | 2 | 73 | 2.7 | 2 | 65 | 3.1 |

Table 2. Systematic distribution of epiphytic ferns and lycopods. For each class, family, and genus, the numbers of epiphytic/hemiepiphytic species ("E/H") and the total number of species ("Total") are given. "%Total" gives the proportion of epiphytic species per taxon in %. An "H" marks genera, which have many or only hemiepiphytes, with "H?" indicating doubtful cases. Totals are from Hassler and Schmitt (2019).

| Class/Family | Genus | E / H | Total | % Total | |
|---|---|---|---|---|---|
| **Lycopodiopsida** | | 142 | 1360 | 10 | |
| **Lycopodiaceae** | | 114 | 480 | 24 | |
| | *Huperzia* | 2 | 25 | 8 | |
| | *Palinhaea* | 1 | 25 | 4 | |
| | *Phlegmariurus* | 111 | 320 | 35 | |
| **Selaginellaceae** | | 28 | 700 | 4 | |
| | *Selaginella* | 28 | 700 | 4 | |
| **Polypodiopsida** | | 2942 | 11000 | 27 | |
| **Psilotaceae** | | 18 | 18 | 100 | |
| | *Psilotum* | 2 | 2 | 100 | |
| | *Tmesipteris* | 16 | 16 | 100 | |
| **Ophioglossaceae** | | 5 | 110 | 5 | |
| | *Cheiroglossa* | 2 | 2 | 100 | |
| | *Ophioderma* | 2 | 5 | 40 | |
| | *Ophioglossum* | 1 | 50 | 2 | |
| **Hymenophyllaceae** | | 433 | 600 | 72 | |
| | *Abrodictyum* | 13 | 35 | 37 | |
| | *Callistopteris* | 2 | 5 | 40 | |
| | *Cephalomanes* | 1 | 5 | 20 | |
| | *Crepidomanes* | 33 | 48 | 71 | |
| | *Didymoglossum* | 48 | 52 | 92 | |
| | *Hymenophyllum* | 262 | 300 | 89 | |
| | *Polyphlebium* | 15 | 17 | 88 | |
| | *Trichomanes* | 37 | 65 | 57 | |
| | *Vandenboschia* | 22 | 24 | 92 | H |
| **Schizaeaceae** | | 6 | 33 | 18 | |
| | *Schizaea* | 2 | 18 | 11 | |
| | *Actinostachys* | 4 | 15 | 27 | |
| **Cyatheaceae** | | 2 | 650 | <1 | |
| | *Cyathea* | 2 | 300 | <1 | |
| **Lindsaeaceae** | | 30 | 230 | 13 | |
| | *Lindsaea* | 28 | 170 | 16 | |
| | *Odontosoria* | 1 | 30 | 3 | |
| | *Sphenomeris* | 1 | 3 | 33 | |
| **Pteridaceae** | | 126 | 1300 | 10 | |
| | *Ananthacorus* | 1 | 1 | 100 | |
| | *Antrophyopsis* | 4 | 4 | 100 | |

| | | | | | |
|---|---|---|---|---|---|
| | *Antrophyum* | 32 | 32 | 100 | |
| | *Coniogramme* | 1 | 25 | 4 | |
| | *Haplopteris* | 33 | 33 | 100 | |
| | *Hecistopteris* | 3 | 3 | 100 | |
| | *Paragymnopteris* | 1 | 5 | 20 | |
| | *Polytaenium* | 13 | 13 | 100 | |
| | *Radiovittaria* | 7 | 7 | 100 | |
| | *Rheopteris* | 1 | 1 | 100 | |
| | *Scoliosorus* | 1 | 1 | 100 | |
| | *Vaginularia* | 8 | 8 | 100 | |
| | *Vittaria* | 21 | 21 | 100 | |
| **Dennstaedtiaceae** | | 4 | 230 | 2 | |
| | *Dennstaedtia* | 1 | 55 | 2 | |
| | *Microlepia* | 3 | 50 | 6 | |
| **Aspleniaceae** | | 259 | 745 | 35 | |
| | *Asplenium* | 246 | 690 | 36 | |
| | *Hymenasplenium* | 13 | 55 | 24 | |
| **Blechnaceae** | | 20 | 245 | 8 | |
| | *Austroblechnum* | 1 | 35 | 3 | |
| | *Blechnum* | 1 | 22 | 5 | H |
| | *Icarus* | 1 | 1 | 100 | |
| | *Lomaridium* | 15 | 15 | 100 | H |
| | *Lomariocycas* | 1 | 18 | 6 | |
| | *Parablechnum* | 1 | 60 | 2 | |
| **Hypodematiaceae** | | 2 | 17 | 12 | |
| | *Leucostegia* | 2 | 2 | 100 | |
| **Dryopteridaceae** | | 424 | 2100 | 20 | |
| | *Arachniodes* | 2 | 80 | 3 | |
| | *Ctenitis* | 1 | 140 | 1 | |
| | *Dryopteris* | 1 | 320 | <1 | |
| | *Elaphoglossum* | 415 | 730 | 57 | |
| | *Rumohra* | 4 | 9 | 44 | |
| | *Stigmatopteris* | 1 | 25 | 4 | |
| **Nephrolepidaceae** | | 19 | 25 | 76 | |
| | *Nephrolepis* | 19 | 25 | 76 | |
| **Lomariopsidaceae** | | 50 | 55 | 91 | |
| | *Lomariopsis* | 50 | 50 | 100 | H? |
| **Tectariaceae** | | 12 | 310 | 4 | |
| | *Arthropteris* | 12 | 15 | 80 | H |
| **Oleandraceae** | | 22 | 25 | 88 | |
| | *Oleandra* | 22 | 25 | 88 | |
| **Davalliaceae** | | 61 | 61 | 100 | |
| | *Davallia* | 61 | 61 | 100 | |
| **Polypodiaceae** | | 1450 | 1629 | 89 | |
| | *Acrosorus* | 6 | 8 | 75 | |
| | *Adenophorus* | 9 | 10 | 90 | |
| | *Adetogramma* | 1 | 1 | 100 | |

| | | | | |
|---|---|---|---|---|
| *Aglaomorpha* | 32 | 33 | 97 | |
| *Alansmia* | 25 | 25 | 100 | |
| *Archigrammitis* | 6 | 6 | 100 | |
| *Ascogrammitis* | 18 | 18 | 100 | |
| *Bosmania* | 1 | 3 | 33 | |
| *Calymmodon* | 24 | 25 | 96 | |
| *Campyloneurum* | 53 | 59 | 90 | |
| *Ceradenia* | 68 | 78 | 87 | |
| *Chrysogrammitis* | 3 | 3 | 100 | |
| *Cochlidium* | 16 | 18 | 89 | |
| *Ctenopterella* | 15 | 18 | 83 | |
| *Dasygrammitis* | 6 | 6 | 100 | |
| *Dendroconche* | 8 | 8 | 100 | H |
| *Dictymia* | 2 | 2 | 100 | |
| *Ellipinema* | 1 | 1 | 100 | |
| *Enterosora* | 18 | 18 | 100 | |
| *Galactodenia* | 5 | 5 | 100 | |
| *Goniophlebium* | 14 | 14 | 100 | |
| *Grammitis* | 39 | 40 | 98 | |
| *Gymnogrammitis* | 1 | 1 | 100 | |
| *Hovenkampia* | 3 | 3 | 100 | |
| *Lecanopteris* | 13 | 13 | 100 | |
| *Lellingeria* | 45 | 54 | 83 | |
| *Lemmaphyllum* | 6 | 7 | 86 | |
| *Lepisorus* | 60 | 68 | 88 | |
| *Leptochilus* | 18 | 33 | 55 | |
| *Leucotrichum* | 6 | 6 | 100 | |
| *Lomaphlebia* | 2 | 2 | 100 | |
| *Loxogramme* | 30 | 36 | 83 | |
| *Luisma* | 1 | 1 | 100 | |
| *Melpomene* | 25 | 30 | 83 | |
| *Microgramma* | 31 | 31 | 100 | |
| *Micropolypodium* | 3 | 3 | 100 | |
| *Microsorum* | 24 | 30 | 80 | |
| *Moranopteris* | 28 | 30 | 93 | |
| *Mycopteris* | 15 | 18 | 83 | |
| *Neocheiropteris* | 2 | 5 | 40 | |
| *Neolepisorus* | 3 | 3 | 100 | |
| *Niphidium* | 8 | 11 | 73 | |
| *Notogrammitis* | 9 | 12 | 75 | |
| *Oreogrammitis* | 142 | 176 | 81 | |
| *Parrisia* | 1 | 1 | 100 | |
| *Pecluma* | 42 | 51 | 82 | |
| *Phlebodium* | 3 | 3 | 100 | |
| *Phymatosorus* | 13 | 17 | 76 | |
| *Pichisermollodes* | 14 | 15 | 93 | |
| *Platycerium* | 16 | 18 | 89 | |

| | | | |
|---|---|---|---|
| *Pleopeltis* | 76 | 90 | 84 |
| *Pleurosoriopsis* | 1 | 1 | 100 |
| *Polypodiodes* | 20 | 21 | 95 |
| *Polypodium* | 37 | 40 | 92 |
| *Prosaptia* | 55 | 55 | 100 |
| *Pyrrosia* | 62 | 65 | 95 |
| *Scleroglossum* | 10 | 10 | 100 |
| *Selliguea* | 108 | 115 | 95 |
| *Serpocaulon* | 47 | 47 | 100 |
| *Stenogrammitis* | 19 | 25 | 76 |
| *Synammia* | 3 | 3 | 100 |
| *Terpsichore* | 15 | 15 | 100 |
| *Thylacopteris* | 1 | 1 | 100 |
| *Tomophyllum* | 28 | 28 | 100 |
| *Tricholepidium* | 5 | 5 | 100 |
| *Xiphopterella* | 9 | 11 | 82 |
| *Zealandia* | 4 | 4 | 100 |
| *Zygophlebia* | 16 | 16 | 100 |